

Product code	Description
CLK-210C	CLP Complete Pesticides QUICKshots Kit
Components:	
CLP-216C-1	Pesticides Individual Standard (1X1 mL)
CLP-216D-1	Pesticides Individual Standard (1X1 mL)
CLP-216E-1	Pesticides Individual Standard (1X1 mL)
CLP-226C-1	Pesticides Individual Standard (1X1 mL)
CLP-226D-1	Pesticides Individual Standard (1X1 mL)
CLP-226E-1	Pesticides Individual Standard (1X1 mL)
CLP-242-1	Pesticides Resolution Check Standard (1X1 mL)
CLP-252-1	Pesticides Performance Evaluation Standard (1X1 mL)
CLP-281-1	Aroclors 1016 and 1260 Standard (1X1 mL)
CLP-282-1	Aroclor 1221 Standard (1X1 mL)
CLP-283-1	Aroclor 1232 Standard (1X1 mL)
CLP-284-1	Aroclor 1242 Standard (1X1 mL)
CLP-285-1	Aroclor 1248 Standard (1X1 mL)
CLP-286-1	Aroclor 1254 Standard (1X1 mL)
CLP-287-1	Toxaphene Standard (1X1 mL)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

1 Identification

- **Product identifier**
- **Trade name:** Pesticides Individual Standard (1X1 mL)
- **Part number:** CLP-216C-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.



GHS08 Health hazard

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

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

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 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:**

n-hexane

- **Hazard statements**

Highly flammable liquid and vapor.

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Causes skin irritation.

Suspected of damaging fertility or the unborn child.

May cause drowsiness or dizziness.

May cause damage to organs through prolonged or repeated exposure.

May be fatal if swallowed and enters airways.

· 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.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Do NOT induce vomiting.

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.

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 occurs: Get medical advice/attention.

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

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:** Not applicable.

· **vPvB:** Not applicable.

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Trade name: Pesticides Individual Standard (1X1 mL)

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3 Composition/information on ingredients

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

- **Dangerous components:**

110-54-3	n-hexane
----------	----------

99.999%

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.
- **After inhalation:** 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.
- **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.

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Trade name: Pesticides Individual Standard (1X1 mL)

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· Protective Action Criteria for Chemicals

· PAC-1:

110-54-3	n-hexane	260 ppm
72-54-8	TDE	2.4 mg/m ³
50-29-3	DDT (common name not adopted by ISO)	3 mg/m ³
60-57-1	dieldrin (ISO)	0.3 mg/m ³
72-20-8	endrin (ISO)	1.8 mg/m ³
76-44-8	heptachlor (ISO)	0.15 mg/m ³
58-89-9	γ -HCH or γ -BHC	9.1 mg/m ³
72-43-5	methoxychlor	30 mg/m ³

· PAC-2:

110-54-3	n-hexane	2900* ppm
72-54-8	TDE	26 mg/m ³
50-29-3	DDT (common name not adopted by ISO)	34 mg/m ³
60-57-1	dieldrin (ISO)	6.8 mg/m ³
72-20-8	endrin (ISO)	20 mg/m ³
76-44-8	heptachlor (ISO)	14 mg/m ³
58-89-9	γ -HCH or γ -BHC	100 mg/m ³
72-43-5	methoxychlor	150 mg/m ³

· PAC-3:

110-54-3	n-hexane	8600** ppm
72-54-8	TDE	160 mg/m ³
50-29-3	DDT (common name not adopted by ISO)	210 mg/m ³
60-57-1	dieldrin (ISO)	450 mg/m ³
72-20-8	endrin (ISO)	2,000 mg/m ³
76-44-8	heptachlor (ISO)	700 mg/m ³
58-89-9	γ -HCH or γ -BHC	1,000 mg/m ³
72-43-5	methoxychlor	4,500 mg/m ³

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.

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Trade name: Pesticides Individual Standard (1X1 mL)

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- **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:

110-54-3 n-hexane

PEL	Long-term value: 1800 mg/m ³ , 500 ppm
REL	Long-term value: 180 mg/m ³ , 50 ppm
TLV	Long-term value: 176 mg/m ³ , 50 ppm Skin; BEI

Ingredients with biological limit values:

110-54-3 n-hexane

BEI	0.4 mg/L Medium: urine Time: end of shift at end of workweek Parameter: 2,5-Hexanedione without hydrolysis
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- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
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 skin.
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: Pesticides Individual 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:	Colorless
Odor:	Characteristic
Odor threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/Melting range:	-95 °C (-139 °F)
Boiling point/Boiling range:	69 °C (156.2 °F)

· Flash point: -22 °C (-7.6 °F)

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 240 °C (464 °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:	1.2 Vol %
Upper:	7.4 Vol %

· Vapor pressure at 20 °C (68 °F): 110 hPa (82.5 mm Hg)

· Density at 20 °C (68 °F): 0.7 g/cm³ (5.8415 lbs/gal)

· Relative density: Not determined.

· Vapor density: Not determined.

· Evaporation rate: Not determined.

· Solubility in / Miscibility with

Water at 20 °C (68 °F): 0.1 g/l

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

· Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

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Trade name: Pesticides Individual Standard (1X1 mL)

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- **Solvent content:**
 - Organic solvents:** 100.0 %
 - VOC content:** 100.00 %
 - 1,000.0 g/l / 8.35 lb/gal
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

110-54-3 n-hexane

Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

- **Carcinogenic categories**

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

50-29-3	DDT (common name not adopted by ISO)	2A
60-57-1	dieldrin (ISO)	3
72-20-8	endrin (ISO)	3
76-44-8	heptachlor (ISO)	2B
319-84-6	alpha-BHC (alpha-HCH)	2B
58-89-9	γ -HCH or γ -BHC	1
72-43-5	methoxychlor	3

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· NTP (National Toxicology Program)

50-29-3	DDT (common name not adopted by ISO)	R
319-84-6	alpha-BHC (alpha-HCH)	R
58-89-9	γ -HCH or γ -BHC	R

· 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 minimus Quantities

-

· UN-Number
· DOT, IMDG, IATA

UN1993

· UN proper shipping name
· DOT
· IMDG
· IATA

Flammable liquids, n.o.s. (Hexanes)

FLAMMABLE LIQUID, N.O.S. (HEXANES), MARINE

POLLUTANT

FLAMMABLE LIQUID, N.O.S. (HEXANES)

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· **Transport hazard class(es)**

· **DOT, IATA**

· **Class**

3 Flammable liquids

· **Label**

3

· **IMDG**

· **Class**

3 Flammable liquids

· **Label**

3

· **Packing group**

· **DOT, IMDG, IATA**

II

· **Environmental hazards:**

Product contains environmentally hazardous substances:
decachlorobiphenyl, n-hexane

· **Marine pollutant:**

Symbol (fish and tree)

· **Special precautions for user**

Warning: Flammable liquids

· **Danger code (Kemler):**

33

· **EMS Number:**

F-E,S-E

· **Stowage Category**

B

· **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: 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. (HEXANES), 3, II,
ENVIRONMENTALLY HAZARDOUS

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Trade name: Pesticides Individual Standard (1X1 mL)

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15 Regulatory information

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

· Sara

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

72-20-8	endrin (ISO)
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58-89-9	γ -HCH or γ -BHC
---------	------------------

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

110-54-3	n-hexane
----------	----------

76-44-8	heptachlor (ISO)
---------	------------------

319-84-6	alpha-BHC (alpha-HCH)
----------	-----------------------

58-89-9	γ -HCH or γ -BHC
---------	------------------

72-43-5	methoxychlor
---------	--------------

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

110-54-3	n-hexane
----------	----------

50-29-3	DDT (common name not adopted by ISO)
---------	--------------------------------------

319-84-6	alpha-BHC (alpha-HCH)
----------	-----------------------

58-89-9	γ -HCH or γ -BHC
---------	------------------

· **Proposition 65**

· **Chemicals known to cause cancer:**

72-54-8	TDE
---------	-----

50-29-3	DDT (common name not adopted by ISO)
---------	--------------------------------------

60-57-1	dieldrin (ISO)
---------	----------------

76-44-8	heptachlor (ISO)
---------	------------------

319-84-6	alpha-BHC (alpha-HCH)
----------	-----------------------

58-89-9	γ -HCH or γ -BHC
---------	------------------

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

50-29-3	DDT (common name not adopted by ISO)
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· **Chemicals known to cause reproductive toxicity for males:**

110-54-3	n-hexane
----------	----------

50-29-3	DDT (common name not adopted by ISO)
---------	--------------------------------------

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

50-29-3	DDT (common name not adopted by ISO)
---------	--------------------------------------

72-20-8	endrin (ISO)
---------	--------------

76-44-8	heptachlor (ISO)
---------	------------------

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

110-54-3	n-hexane	II
----------	----------	----

72-54-8	TDE	B2
---------	-----	----

50-29-3	DDT (common name not adopted by ISO)	B2
---------	--------------------------------------	----

60-57-1	dieldrin (ISO)	B2
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Trade name: Pesticides Individual Standard (1X1 mL)

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72-20-8	endrin (ISO)	D
76-44-8	heptachlor (ISO)	B2
319-84-6	alpha-BHC (alpha-HCH)	B2
72-43-5	methoxychlor	D

· TLV (Threshold Limit Value established by ACGIH)

50-29-3	DDT (common name not adopted by ISO)	A3
60-57-1	dieldrin (ISO)	(A4)
72-20-8	endrin (ISO)	A4
76-44-8	heptachlor (ISO)	A3
58-89-9	γ -HCH or γ -BHC	A3
72-43-5	methoxychlor	A4

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

50-29-3	DDT (common name not adopted by ISO)	
60-57-1	dieldrin (ISO)	
76-44-8	heptachlor (ISO)	
72-43-5	methoxychlor	

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· Department issuing SDS: Document Control / Regulatory

· Contact: regulatory@ultrasci.com

· Date of preparation / last revision 03/31/2019 / 1

· Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Repr. 2: Reproductive toxicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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Trade name: Pesticides Individual Standard (1X1 mL)STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1

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

US

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1 Identification

- **Product identifier**
- **Trade name:** Pesticides Individual Standard (1X1 mL)
- **Part number:** CLP-216D-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.



GHS08 Health hazard

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

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

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 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:**

n-hexane

- **Hazard statements**

Highly flammable liquid and vapor.

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Trade name: Pesticides Individual Standard (1X1 mL)

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Causes skin irritation.

Suspected of damaging fertility or the unborn child.

May cause drowsiness or dizziness.

May cause damage to organs through prolonged or repeated exposure.

May be fatal if swallowed and enters airways.

· **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.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Do NOT induce vomiting.

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.

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 occurs: Get medical advice/attention.

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

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:** Not applicable.

· **vPvB:** Not applicable.

US

(Contd. on page 3)

**Safety Data Sheet**
acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 2)

3 Composition/information on ingredients

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

· Dangerous components:

110-54-3 n-hexane

99.999%

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.
- **After inhalation:** 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.
- **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.

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Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

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Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 3)

· Protective Action Criteria for Chemicals

· PAC-1:

110-54-3	n-hexane	260 ppm
72-54-8	TDE	2.4 mg/m ³
50-29-3	DDT (common name not adopted by ISO)	3 mg/m ³
60-57-1	dieldrin (ISO)	0.3 mg/m ³
72-20-8	endrin (ISO)	1.8 mg/m ³
76-44-8	heptachlor (ISO)	0.15 mg/m ³
58-89-9	γ -HCH or γ -BHC	9.1 mg/m ³
72-43-5	methoxychlor	30 mg/m ³

· PAC-2:

110-54-3	n-hexane	2900* ppm
72-54-8	TDE	26 mg/m ³
50-29-3	DDT (common name not adopted by ISO)	34 mg/m ³
60-57-1	dieldrin (ISO)	6.8 mg/m ³
72-20-8	endrin (ISO)	20 mg/m ³
76-44-8	heptachlor (ISO)	14 mg/m ³
58-89-9	γ -HCH or γ -BHC	100 mg/m ³
72-43-5	methoxychlor	150 mg/m ³

· PAC-3:

110-54-3	n-hexane	8600** ppm
72-54-8	TDE	160 mg/m ³
50-29-3	DDT (common name not adopted by ISO)	210 mg/m ³
60-57-1	dieldrin (ISO)	450 mg/m ³
72-20-8	endrin (ISO)	2,000 mg/m ³
76-44-8	heptachlor (ISO)	700 mg/m ³
58-89-9	γ -HCH or γ -BHC	1,000 mg/m ³
72-43-5	methoxychlor	4,500 mg/m ³

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.

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Safety Data Sheet acc. to OSHA HCS

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Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 4)

- **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:**

110-54-3 n-hexane

PEL	Long-term value: 1800 mg/m ³ , 500 ppm
REL	Long-term value: 180 mg/m ³ , 50 ppm
TLV	Long-term value: 176 mg/m ³ , 50 ppm Skin; BEI

- **Ingredients with biological limit values:**

110-54-3 n-hexane

BEI	0.4 mg/L Medium: urine Time: end of shift at end of workweek Parameter: 2,5-Hexanedione without hydrolysis
-----	---

- **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 skin.
- 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: Pesticides Individual Standard (1X1 mL)

(Contd. of page 5)

· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Fluid
Color:	Colorless
Odor:	Characteristic
Odor threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/Melting range:	-95 °C (-139 °F)
Boiling point/Boiling range:	69 °C (156.2 °F)

· Flash point: -22 °C (-7.6 °F)

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 240 °C (464 °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:	1.2 Vol %
Upper:	7.4 Vol %

· Vapor pressure at 20 °C (68 °F): 110 hPa (82.5 mm Hg)

· Density at 20 °C (68 °F): 0.7 g/cm³ (5.8415 lbs/gal)

· Relative density: Not determined.

· Vapor density: Not determined.

· Evaporation rate: Not determined.

· Solubility in / Miscibility with

Water at 20 °C (68 °F): 0.1 g/l

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

· Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

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Trade name: Pesticides Individual Standard (1X1 mL)

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- **Solvent content:**
 - Organic solvents:** 100.0 %
 - VOC content:** 100.00 %
 - 1,000.0 g/l / 8.35 lb/gal
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

110-54-3 n-hexane

Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

- **Carcinogenic categories**

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

50-29-3	DDT (common name not adopted by ISO)	2A
60-57-1	dieldrin (ISO)	3
72-20-8	endrin (ISO)	3
76-44-8	heptachlor (ISO)	2B
319-84-6	alpha-BHC (alpha-HCH)	2B
58-89-9	γ -HCH or γ -BHC	1
72-43-5	methoxychlor	3

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· NTP (National Toxicology Program)

50-29-3	DDT (common name not adopted by ISO)	R
319-84-6	alpha-BHC (alpha-HCH)	R
58-89-9	γ -HCH or γ -BHC	R

· 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 minimus Quantities	-
· UN-Number · DOT, IMDG, IATA	UN1993
· UN proper shipping name · DOT · IMDG · IATA	Flammable liquids, n.o.s. (Hexanes) FLAMMABLE LIQUID, N.O.S. (HEXANES), MARINE POLLUTANT FLAMMABLE LIQUID, N.O.S. (HEXANES)

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Trade name: Pesticides Individual Standard (1X1 mL)

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· **Transport hazard class(es)**

· **DOT, IATA**

· **Class**

3 Flammable liquids

· **Label**

3

· **IMDG**

· **Class**

3 Flammable liquids

· **Label**

3

· **Packing group**

· **DOT, IMDG, IATA**

II

· **Environmental hazards:**

Product contains environmentally hazardous substances:
decachlorobiphenyl, n-hexane

· **Marine pollutant:**

Symbol (fish and tree)

· **Special precautions for user**

Warning: Flammable liquids

· **Danger code (Kemler):**

33

· **EMS Number:**

F-E,S-E

· **Stowage Category**

B

· **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: 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. (HEXANES), 3, II,
ENVIRONMENTALLY HAZARDOUS

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Trade name: Pesticides Individual Standard (1X1 mL)

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15 Regulatory information

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

· Sara

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

72-20-8	endrin (ISO)
---------	--------------

58-89-9	γ -HCH or γ -BHC
---------	------------------

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

110-54-3	n-hexane
----------	----------

76-44-8	heptachlor (ISO)
---------	------------------

319-84-6	alpha-BHC (alpha-HCH)
----------	-----------------------

58-89-9	γ -HCH or γ -BHC
---------	------------------

72-43-5	methoxychlor
---------	--------------

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

110-54-3	n-hexane
----------	----------

50-29-3	DDT (common name not adopted by ISO)
---------	--------------------------------------

319-84-6	alpha-BHC (alpha-HCH)
----------	-----------------------

58-89-9	γ -HCH or γ -BHC
---------	------------------

· **Proposition 65**

· **Chemicals known to cause cancer:**

72-54-8	TDE
---------	-----

50-29-3	DDT (common name not adopted by ISO)
---------	--------------------------------------

60-57-1	dieldrin (ISO)
---------	----------------

76-44-8	heptachlor (ISO)
---------	------------------

319-84-6	alpha-BHC (alpha-HCH)
----------	-----------------------

58-89-9	γ -HCH or γ -BHC
---------	------------------

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

50-29-3	DDT (common name not adopted by ISO)
---------	--------------------------------------

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

110-54-3	n-hexane
----------	----------

50-29-3	DDT (common name not adopted by ISO)
---------	--------------------------------------

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

50-29-3	DDT (common name not adopted by ISO)
---------	--------------------------------------

72-20-8	endrin (ISO)
---------	--------------

76-44-8	heptachlor (ISO)
---------	------------------

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

110-54-3	n-hexane	II
----------	----------	----

72-54-8	TDE	B2
---------	-----	----

50-29-3	DDT (common name not adopted by ISO)	B2
---------	--------------------------------------	----

60-57-1	dieldrin (ISO)	B2
---------	----------------	----

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Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

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72-20-8	endrin (ISO)	D
76-44-8	heptachlor (ISO)	B2
319-84-6	alpha-BHC (alpha-HCH)	B2
72-43-5	methoxychlor	D

· TLV (Threshold Limit Value established by ACGIH)

50-29-3	DDT (common name not adopted by ISO)	A3
60-57-1	dieldrin (ISO)	(A4)
72-20-8	endrin (ISO)	A4
76-44-8	heptachlor (ISO)	A3
58-89-9	γ -HCH or γ -BHC	A3
72-43-5	methoxychlor	A4

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

50-29-3	DDT (common name not adopted by ISO)	
60-57-1	dieldrin (ISO)	
76-44-8	heptachlor (ISO)	
72-43-5	methoxychlor	

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· Department issuing SDS: Document Control / Regulatory

· Contact: regulatory@ultrasci.com

· Date of preparation / last revision 03/31/2019 / 1

· Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Repr. 2: Reproductive toxicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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Safety Data Sheet
acc. to OSHA HCS

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Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1

(Contd. of page 11)

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

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

1 Identification

- **Product identifier**
- **Trade name:** Pesticides Individual Standard (1X1 mL)
- **Part number:** CLP-216E-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.



GHS08 Health hazard

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

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

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 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:**

n-hexane

- **Hazard statements**

Highly flammable liquid and vapor.

(Contd. on page 2)

Safety Data Sheet acc. to OSHA HCS

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Version Number 2

Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 1)

Causes skin irritation.

Suspected of damaging fertility or the unborn child.

May cause drowsiness or dizziness.

May cause damage to organs through prolonged or repeated exposure.

May be fatal if swallowed and enters airways.

· **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.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Do NOT induce vomiting.

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.

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 occurs: Get medical advice/attention.

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

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:** Not applicable.

· **vPvB:** Not applicable.

US

(Contd. on page 3)

**Safety Data Sheet**
acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 2)

3 Composition/information on ingredients

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

· Dangerous components:

110-54-3 n-hexane

99.999%

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.
- **After inhalation:** 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.
- **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.

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Version Number 2

Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 3)

· Protective Action Criteria for Chemicals

· PAC-1:

110-54-3	n-hexane	260 ppm
72-54-8	TDE	2.4 mg/m ³
50-29-3	DDT (common name not adopted by ISO)	3 mg/m ³
60-57-1	dieldrin (ISO)	0.3 mg/m ³
72-20-8	endrin (ISO)	1.8 mg/m ³
76-44-8	heptachlor (ISO)	0.15 mg/m ³
58-89-9	γ -HCH or γ -BHC	9.1 mg/m ³
72-43-5	methoxychlor	30 mg/m ³

· PAC-2:

110-54-3	n-hexane	2900* ppm
72-54-8	TDE	26 mg/m ³
50-29-3	DDT (common name not adopted by ISO)	34 mg/m ³
60-57-1	dieldrin (ISO)	6.8 mg/m ³
72-20-8	endrin (ISO)	20 mg/m ³
76-44-8	heptachlor (ISO)	14 mg/m ³
58-89-9	γ -HCH or γ -BHC	100 mg/m ³
72-43-5	methoxychlor	150 mg/m ³

· PAC-3:

110-54-3	n-hexane	8600** ppm
72-54-8	TDE	160 mg/m ³
50-29-3	DDT (common name not adopted by ISO)	210 mg/m ³
60-57-1	dieldrin (ISO)	450 mg/m ³
72-20-8	endrin (ISO)	2,000 mg/m ³
76-44-8	heptachlor (ISO)	700 mg/m ³
58-89-9	γ -HCH or γ -BHC	1,000 mg/m ³
72-43-5	methoxychlor	4,500 mg/m ³

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.

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- **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:

110-54-3 n-hexane

PEL	Long-term value: 1800 mg/m ³ , 500 ppm
REL	Long-term value: 180 mg/m ³ , 50 ppm
TLV	Long-term value: 176 mg/m ³ , 50 ppm
	Skin; BEI

Ingredients with biological limit values:

110-54-3 n-hexane

BEI	0.4 mg/L
	Medium: urine
	Time: end of shift at end of workweek
	Parameter: 2,5-Hexanedione without hydrolysis

- **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 skin.
- 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: Pesticides Individual Standard (1X1 mL)

(Contd. of page 5)

· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Fluid
Color:	Colorless
Odor:	Characteristic
Odor threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/Melting range:	-95 °C (-139 °F)
Boiling point/Boiling range:	69 °C (156.2 °F)

· Flash point: -22 °C (-7.6 °F)

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 240 °C (464 °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:	1.2 Vol %
Upper:	7.4 Vol %

· Vapor pressure at 20 °C (68 °F): 110 hPa (82.5 mm Hg)

· Density at 20 °C (68 °F): 0.7 g/cm³ (5.8415 lbs/gal)

· Relative density: Not determined.

· Vapor density: Not determined.

· Evaporation rate: Not determined.

· Solubility in / Miscibility with

Water at 20 °C (68 °F): 0.1 g/l

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

· Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

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Trade name: Pesticides Individual Standard (1X1 mL)

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- **Solvent content:**
 - Organic solvents:** 100.0 %
 - VOC content:** 100.00 %
 - 1,000.0 g/l / 8.35 lb/gal
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

110-54-3 n-hexane

Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

- **Carcinogenic categories**

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

50-29-3	DDT (common name not adopted by ISO)	2A
60-57-1	dieldrin (ISO)	3
72-20-8	endrin (ISO)	3
76-44-8	heptachlor (ISO)	2B
319-84-6	alpha-BHC (alpha-HCH)	2B
58-89-9	γ -HCH or γ -BHC	1
72-43-5	methoxychlor	3

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· NTP (National Toxicology Program)

50-29-3	DDT (common name not adopted by ISO)	R
319-84-6	alpha-BHC (alpha-HCH)	R
58-89-9	γ -HCH or γ -BHC	R

· 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 minimus Quantities

-

· UN-Number
· DOT, IMDG, IATA

UN1993

· UN proper shipping name
· DOT
· IMDG
· IATA

Flammable liquids, n.o.s. (Hexanes)

FLAMMABLE LIQUID, N.O.S. (HEXANES), MARINE

POLLUTANT

FLAMMABLE LIQUID, N.O.S. (HEXANES)

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· **Transport hazard class(es)**

· **DOT, IATA**

· **Class**

3 Flammable liquids

· **Label**

3

· **IMDG**

· **Class**

3 Flammable liquids

· **Label**

3

· **Packing group**

· **DOT, IMDG, IATA**

II

· **Environmental hazards:**

Product contains environmentally hazardous substances:
decachlorobiphenyl, n-hexane

· **Marine pollutant:**

Symbol (fish and tree)

· **Special precautions for user**

Warning: Flammable liquids

· **Danger code (Kemler):**

33

· **EMS Number:**

F-E,S-E

· **Stowage Category**

B

· **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: 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. (HEXANES), 3, II,
ENVIRONMENTALLY HAZARDOUS

US

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Trade name: Pesticides Individual Standard (1X1 mL)

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15 Regulatory information

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

· Sara

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

72-20-8	endrin (ISO)
---------	--------------

58-89-9	γ -HCH or γ -BHC
---------	------------------

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

110-54-3	n-hexane
----------	----------

76-44-8	heptachlor (ISO)
---------	------------------

319-84-6	alpha-BHC (alpha-HCH)
----------	-----------------------

58-89-9	γ -HCH or γ -BHC
---------	------------------

72-43-5	methoxychlor
---------	--------------

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

110-54-3	n-hexane
----------	----------

50-29-3	DDT (common name not adopted by ISO)
---------	--------------------------------------

319-84-6	alpha-BHC (alpha-HCH)
----------	-----------------------

58-89-9	γ -HCH or γ -BHC
---------	------------------

· **Proposition 65**

· **Chemicals known to cause cancer:**

72-54-8	TDE
---------	-----

50-29-3	DDT (common name not adopted by ISO)
---------	--------------------------------------

60-57-1	dieldrin (ISO)
---------	----------------

76-44-8	heptachlor (ISO)
---------	------------------

319-84-6	alpha-BHC (alpha-HCH)
----------	-----------------------

58-89-9	γ -HCH or γ -BHC
---------	------------------

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

50-29-3	DDT (common name not adopted by ISO)
---------	--------------------------------------

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

110-54-3	n-hexane
----------	----------

50-29-3	DDT (common name not adopted by ISO)
---------	--------------------------------------

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

50-29-3	DDT (common name not adopted by ISO)
---------	--------------------------------------

72-20-8	endrin (ISO)
---------	--------------

76-44-8	heptachlor (ISO)
---------	------------------

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

110-54-3	n-hexane	II
----------	----------	----

72-54-8	TDE	B2
---------	-----	----

50-29-3	DDT (common name not adopted by ISO)	B2
---------	--------------------------------------	----

60-57-1	dieldrin (ISO)	B2
---------	----------------	----

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Trade name: Pesticides Individual Standard (1X1 mL)

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72-20-8	endrin (ISO)	D
76-44-8	heptachlor (ISO)	B2
319-84-6	alpha-BHC (alpha-HCH)	B2
72-43-5	methoxychlor	D

· TLV (Threshold Limit Value established by ACGIH)

50-29-3	DDT (common name not adopted by ISO)	A3
60-57-1	dieldrin (ISO)	(A4)
72-20-8	endrin (ISO)	A4
76-44-8	heptachlor (ISO)	A3
58-89-9	γ -HCH or γ -BHC	A3
72-43-5	methoxychlor	A4

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

50-29-3	DDT (common name not adopted by ISO)	
60-57-1	dieldrin (ISO)	
76-44-8	heptachlor (ISO)	
72-43-5	methoxychlor	

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· Department issuing SDS: Document Control / Regulatory

· Contact: regulatory@ultrasci.com

· Date of preparation / last revision 03/31/2019 / 1

· Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Repr. 2: Reproductive toxicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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Trade name: Pesticides Individual Standard (1X1 mL)STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1

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

US

Safety Data Sheet acc. to OSHA HCS

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Version Number 2

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1 Identification

- **Product identifier**
- **Trade name:** Pesticides Individual Standard (1X1 mL)
- **Part number:** CLP-226C-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.



GHS08 Health hazard

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

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

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 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:**

n-hexane

- **Hazard statements**

Highly flammable liquid and vapor.

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Trade name: Pesticides Individual Standard (1X1 mL)

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Causes skin irritation.

Suspected of damaging fertility or the unborn child.

May cause drowsiness or dizziness.

May cause damage to organs through prolonged or repeated exposure.

May be fatal if swallowed and enters airways.

· **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.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Do NOT induce vomiting.

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.

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 occurs: Get medical advice/attention.

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

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:** Not applicable.

· **vPvB:** Not applicable.

US

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Trade name: Pesticides Individual Standard (1X1 mL)

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3 Composition/information on ingredients

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

· Dangerous components:

110-54-3 n-hexane

99.985%

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.
- **After inhalation:** 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.
- **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.

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Trade name: Pesticides Individual Standard (1X1 mL)

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· Protective Action Criteria for Chemicals

· PAC-1:

110-54-3	n-hexane	260 ppm
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	6.5 mg/m ³
1024-57-3	heptachlor epoxide - isomer B	0.15 mg/m ³
309-00-2	aldrin (ISO)	0.91 mg/m ³

· PAC-2:

110-54-3	n-hexane	2900* ppm
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	72 mg/m ³
1024-57-3	heptachlor epoxide - isomer B	0.5 mg/m ³
309-00-2	aldrin (ISO)	10 mg/m ³

· PAC-3:

110-54-3	n-hexane	8600** ppm
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	170 mg/m ³
1024-57-3	heptachlor epoxide - isomer B	3 mg/m ³
309-00-2	aldrin (ISO)	100 mg/m ³

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 item 7.

· Control parameters

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

110-54-3 n-hexane

PEL Long-term value: 1800 mg/m³, 500 ppm

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Trade name: Pesticides Individual Standard (1X1 mL)

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REL	Long-term value: 180 mg/m ³ , 50 ppm
TLV	Long-term value: 176 mg/m ³ , 50 ppm
	Skin; BEI

Ingredients with biological limit values:
110-54-3 n-hexane

BEI	0.4 mg/L
	Medium: urine
	Time: end of shift at end of workweek
	Parameter: 2,5-Hexanedione without hydrolysis

· **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 skin.
- 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

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Fluid

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Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 5)

· Color:	Colorless
· Odor:	Characteristic
· Odor threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/Melting range:	-95 °C (-139 °F)
Boiling point/Boiling range:	69 °C (156.2 °F)
· Flash point:	-22 °C (-7.6 °F)
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	240 °C (464 °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:	1.2 Vol %
Upper:	7.4 Vol %
· Vapor pressure at 20 °C (68 °F):	110 hPa (82.5 mm Hg)
· Density at 20 °C (68 °F):	0.7 g/cm ³ (5.8415 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with	
Water at 20 °C (68 °F):	0.1 g/l
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	100.0 %
VOC content:	99.99 %
	999.9 g/l / 8.34 lb/gal
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.

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Trade name: Pesticides Individual Standard (1X1 mL)

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· **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	5,001 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

110-54-3 n-hexane

Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

· **Primary irritant effect:**

· **on the skin:** Irritant to skin and mucous membranes.

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

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

· **Additional toxicological information:**

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

Irritant

· **Carcinogenic categories**

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

1024-57-3	heptachlor epoxide - isomer B	2B
319-85-7	(1alpha,2beta,3alpha,4beta,5alpha,6beta)-1,2,3,4,5,6-hexachlorocyclohexane	2B
309-00-2	aldrin (ISO)	3

· **NTP (National Toxicology Program)**

319-85-7	(1alpha,2beta,3alpha,4beta,5alpha,6beta)-1,2,3,4,5,6-hexachlorocyclohexane	R
319-86-8	delta-BHC (delta-HCH)	R

· **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.

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Trade name: Pesticides Individual Standard (1X1 mL)

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- **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** UN1993
- **UN proper shipping name**
- **DOT** Flammable liquids, n.o.s. (Hexanes)
- **IMDG** FLAMMABLE LIQUID, N.O.S. (HEXANES), MARINE POLLUTANT
- **IATA** FLAMMABLE LIQUID, N.O.S. (HEXANES)
- **Transport hazard class(es)**
- **DOT, IATA**
- 
- **Class** 3 Flammable liquids
- **Label** 3
- **IMDG**
- 

- **Class** 3 Flammable liquids
- **Label** 3
- **Packing group**
- **DOT, IMDG, IATA** II
- **Environmental hazards:** Product contains environmentally hazardous substances: decachlorobiphenyl, n-hexane
- **Marine pollutant:** Symbol (fish and tree)
- **Special precautions for user** Warning: Flammable liquids

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Trade name: Pesticides Individual Standard (1X1 mL)

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· Danger code (Kemler):	33
· EMS Number:	F-E, <u>S-E</u>
· Stowage Category	B
· 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: 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. (HEXANES), 3, II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

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

· Section 355 (extremely hazardous substances):

309-00-2 aldrin (ISO)

· Section 313 (Specific toxic chemical listings):

110-54-3 n-hexane

309-00-2 aldrin (ISO)

· TSCA (Toxic Substances Control Act):

110-54-3 n-hexane

319-85-7 (1 alpha,2 beta,3 alpha,4 beta,5 alpha,6 beta)-1,2,3,4,5,6-hexachlorocyclohexane

319-86-8 delta-BHC (delta-HCH)

· Proposition 65

· Chemicals known to cause cancer:

72-55-9 2,2-bis(p-chlorophenyl)-1,1-dichloroethylene

1024-57-3 heptachlor epoxide - isomer B

319-85-7 (1 alpha,2 beta,3 alpha,4 beta,5 alpha,6 beta)-1,2,3,4,5,6-hexachlorocyclohexane

319-86-8 delta-BHC (delta-HCH)

309-00-2 aldrin (ISO)

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

110-54-3 n-hexane

72-55-9 2,2-bis(p-chlorophenyl)-1,1-dichloroethylene

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Trade name: Pesticides Individual Standard (1X1 mL)

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Chemicals known to cause developmental toxicity:

72-55-9 2,2-bis(p-chlorophenyl)-1,1-dichloroethylene

Carcinogenic categories
EPA (Environmental Protection Agency)

110-54-3	n-hexane	II
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	B2
1024-57-3	heptachlor epoxide - isomer B	B2
319-85-7	(1alpha,2beta,3alpha,4beta,5alpha,6beta)-1,2,3,4,5,6-hexachlorocyclohexane	C
319-86-8	delta-BHC (delta-HCH)	D
309-00-2	aldrin (ISO)	B2

TLV (Threshold Limit Value established by ACGIH)

1024-57-3	heptachlor epoxide - isomer B	A3
309-00-2	aldrin (ISO)	A3

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

1024-57-3	heptachlor epoxide - isomer B	
309-00-2	aldrin (ISO)	

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

Department issuing SDS: Document Control / Regulatory

Contact: regulatory@ultrasci.com

Date of preparation / last revision 03/31/2019 / 1

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Repr. 2: Reproductive toxicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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Trade name: Pesticides Individual Standard (1X1 mL)STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1

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

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1 Identification

- **Product identifier**
- **Trade name:** Pesticides Individual Standard (1X1 mL)
- **Part number:** CLP-226D-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.



GHS08 Health hazard

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

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

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 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:**

n-hexane

- **Hazard statements**

Highly flammable liquid and vapor.

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Trade name: Pesticides Individual Standard (1X1 mL)

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Causes skin irritation.

Suspected of damaging fertility or the unborn child.

May cause drowsiness or dizziness.

May cause damage to organs through prolonged or repeated exposure.

May be fatal if swallowed and enters airways.

· **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.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Do NOT induce vomiting.

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.

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 occurs: Get medical advice/attention.

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

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:** Not applicable.

· **vPvB:** Not applicable.

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Safety Data Sheet
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Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 2)

3 Composition/information on ingredients

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

· Dangerous components:

110-54-3 n-hexane

99.985%

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.
- **After inhalation:** 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.
- **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.

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Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 3)

· Protective Action Criteria for Chemicals

· PAC-1:

110-54-3	n-hexane	260 ppm
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	6.5 mg/m ³
1024-57-3	heptachlor epoxide - isomer B	0.15 mg/m ³
309-00-2	aldrin (ISO)	0.91 mg/m ³

· PAC-2:

110-54-3	n-hexane	2900* ppm
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	72 mg/m ³
1024-57-3	heptachlor epoxide - isomer B	0.5 mg/m ³
309-00-2	aldrin (ISO)	10 mg/m ³

· PAC-3:

110-54-3	n-hexane	8600** ppm
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	170 mg/m ³
1024-57-3	heptachlor epoxide - isomer B	3 mg/m ³
309-00-2	aldrin (ISO)	100 mg/m ³

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 item 7.

· Control parameters

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

110-54-3 n-hexane

PEL Long-term value: 1800 mg/m³, 500 ppm

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REL	Long-term value: 180 mg/m ³ , 50 ppm
TLV	Long-term value: 176 mg/m ³ , 50 ppm
	Skin; BEI

Ingredients with biological limit values:
110-54-3 n-hexane

BEI	0.4 mg/L
	Medium: urine
	Time: end of shift at end of workweek
	Parameter: 2,5-Hexanedione without hydrolysis

· **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 skin.
- 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

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Fluid

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· Color:	Colorless
· Odor:	Characteristic
· Odor threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/Melting range:	-95 °C (-139 °F)
Boiling point/Boiling range:	69 °C (156.2 °F)
· Flash point:	-22 °C (-7.6 °F)
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	240 °C (464 °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:	1.2 Vol %
Upper:	7.4 Vol %
· Vapor pressure at 20 °C (68 °F):	110 hPa (82.5 mm Hg)
· Density at 20 °C (68 °F):	0.7 g/cm ³ (5.8415 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with	
Water at 20 °C (68 °F):	0.1 g/l
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	100.0 %
VOC content:	99.99 %
	999.9 g/l / 8.34 lb/gal
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.

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Trade name: Pesticides Individual Standard (1X1 mL)

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· **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	5,001 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

110-54-3 n-hexane

Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

· **Primary irritant effect:**

· **on the skin:** Irritant to skin and mucous membranes.

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

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

· **Additional toxicological information:**

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

Irritant

· **Carcinogenic categories**

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

1024-57-3	heptachlor epoxide - isomer B	2B
319-85-7	(1alpha,2beta,3alpha,4beta,5alpha,6beta)-1,2,3,4,5,6-hexachlorocyclohexane	2B
309-00-2	aldrin (ISO)	3

· **NTP (National Toxicology Program)**

319-85-7	(1alpha,2beta,3alpha,4beta,5alpha,6beta)-1,2,3,4,5,6-hexachlorocyclohexane	R
319-86-8	delta-BHC (delta-HCH)	R

· **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.

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Trade name: Pesticides Individual Standard (1X1 mL)

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- **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 | UN1993 |
| · UN proper shipping name | |
| · DOT | Flammable liquids, n.o.s. (Hexanes) |
| · IMDG | FLAMMABLE LIQUID, N.O.S. (HEXANES), MARINE POLLUTANT |
| · IATA | FLAMMABLE LIQUID, N.O.S. (HEXANES) |
| · Transport hazard class(es) | |
| · DOT, IATA | |
|  | |
| · Class | 3 Flammable liquids |
| · Label | 3 |
| · IMDG | |
|   | |
| · Class | 3 Flammable liquids |
| · Label | 3 |
| · Packing group | |
| · DOT, IMDG, IATA | II |
| · Environmental hazards: | Product contains environmentally hazardous substances: decachlorobiphenyl, n-hexane |
| · Marine pollutant: | Symbol (fish and tree) |
| · Special precautions for user | Warning: Flammable liquids |

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Trade name: Pesticides Individual Standard (1X1 mL)

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· Danger code (Kemler):	33
· EMS Number:	F-E, <u>S-E</u>
· 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. (HEXANES), 3, II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

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

· Section 355 (extremely hazardous substances):

309-00-2 aldrin (ISO)

· Section 313 (Specific toxic chemical listings):

110-54-3 n-hexane

309-00-2 aldrin (ISO)

· TSCA (Toxic Substances Control Act):

110-54-3 n-hexane

319-85-7 (1 alpha,2 beta,3 alpha,4 beta,5 alpha,6 beta)-1,2,3,4,5,6-hexachlorocyclohexane

319-86-8 delta-BHC (delta-HCH)

· Proposition 65

· Chemicals known to cause cancer:

72-55-9 2,2-bis(p-chlorophenyl)-1,1-dichloroethylene

1024-57-3 heptachlor epoxide - isomer B

319-85-7 (1 alpha,2 beta,3 alpha,4 beta,5 alpha,6 beta)-1,2,3,4,5,6-hexachlorocyclohexane

319-86-8 delta-BHC (delta-HCH)

309-00-2 aldrin (ISO)

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

110-54-3 n-hexane

72-55-9 2,2-bis(p-chlorophenyl)-1,1-dichloroethylene

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

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Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 9)

Chemicals known to cause developmental toxicity:

72-55-9 2,2-bis(p-chlorophenyl)-1,1-dichloroethylene

Carcinogenic categories
EPA (Environmental Protection Agency)

110-54-3	n-hexane	II
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	B2
1024-57-3	heptachlor epoxide - isomer B	B2
319-85-7	(1alpha,2beta,3alpha,4beta,5alpha,6beta)-1,2,3,4,5,6-hexachlorocyclohexane	C
319-86-8	delta-BHC (delta-HCH)	D
309-00-2	aldrin (ISO)	B2

TLV (Threshold Limit Value established by ACGIH)

1024-57-3	heptachlor epoxide - isomer B	A3
309-00-2	aldrin (ISO)	A3

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

1024-57-3	heptachlor epoxide - isomer B	
309-00-2	aldrin (ISO)	

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

Department issuing SDS: Document Control / Regulatory

Contact: regulatory@ultrasci.com

Date of preparation / last revision 03/31/2019 / 1

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Repr. 2: Reproductive toxicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

(Contd. on page 11)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1

(Contd. of page 10)

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

US

Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

1 Identification

- **Product identifier**
- **Trade name:** Pesticides Individual Standard (1X1 mL)
- **Part number:** CLP-226E-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.



GHS08 Health hazard

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

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

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 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:**

n-hexane

- **Hazard statements**

Highly flammable liquid and vapor.

(Contd. on page 2)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 1)

Causes skin irritation.

Suspected of damaging fertility or the unborn child.

May cause drowsiness or dizziness.

May cause damage to organs through prolonged or repeated exposure.

May be fatal if swallowed and enters airways.

· **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.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Do NOT induce vomiting.

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.

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 occurs: Get medical advice/attention.

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

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 Health = 1

FIRE 3 Fire = 3

REACTIVITY 0 Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

US

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 2)

3 Composition/information on ingredients

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

· Dangerous components:

110-54-3 n-hexane

99.985%

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.
- **After inhalation:** 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.
- **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.

(Contd. on page 4)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 3)

· Protective Action Criteria for Chemicals

· PAC-1:

110-54-3	n-hexane	260 ppm
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	6.5 mg/m ³
1024-57-3	heptachlor epoxide - isomer B	0.15 mg/m ³
309-00-2	aldrin (ISO)	0.91 mg/m ³

· PAC-2:

110-54-3	n-hexane	2900* ppm
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	72 mg/m ³
1024-57-3	heptachlor epoxide - isomer B	0.5 mg/m ³
309-00-2	aldrin (ISO)	10 mg/m ³

· PAC-3:

110-54-3	n-hexane	8600** ppm
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	170 mg/m ³
1024-57-3	heptachlor epoxide - isomer B	3 mg/m ³
309-00-2	aldrin (ISO)	100 mg/m ³

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 item 7.

· Control parameters

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

110-54-3 n-hexane

PEL Long-term value: 1800 mg/m³, 500 ppm

(Contd. on page 5)

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Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 4)

REL Long-term value: 180 mg/m³, 50 ppm

TLV Long-term value: 176 mg/m³, 50 ppm
Skin; BEI

Ingredients with biological limit values:
110-54-3 n-hexane

BEI 0.4 mg/L
Medium: urine
Time: end of shift at end of workweek
Parameter: 2,5-Hexanedione without hydrolysis

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 skin.
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

9 Physical and chemical properties

Information on basic physical and chemical properties
General Information
Appearance:
Form: Fluid

(Contd. on page 6)

Safety Data Sheet

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Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 5)

· Color:	Colorless
· Odor:	Characteristic
· Odor threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/Melting range:	-95 °C (-139 °F)
Boiling point/Boiling range:	69 °C (156.2 °F)
· Flash point:	-22 °C (-7.6 °F)
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	240 °C (464 °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:	1.2 Vol %
Upper:	7.4 Vol %
· Vapor pressure at 20 °C (68 °F):	110 hPa (82.5 mm Hg)
· Density at 20 °C (68 °F):	0.7 g/cm ³ (5.8415 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with	
Water at 20 °C (68 °F):	0.1 g/l
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	100.0 %
VOC content:	99.99 %
	999.9 g/l / 8.34 lb/gal
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.

(Contd. on page 7)

US

Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

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Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 6)

· **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	5,001 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

110-54-3 n-hexane

Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

· **Primary irritant effect:**

· **on the skin:** Irritant to skin and mucous membranes.

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

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

· **Additional toxicological information:**

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

Irritant

· **Carcinogenic categories**

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

1024-57-3	heptachlor epoxide - isomer B	2B
319-85-7	(1alpha,2beta,3alpha,4beta,5alpha,6beta)-1,2,3,4,5,6-hexachlorocyclohexane	2B
309-00-2	aldrin (ISO)	3

· **NTP (National Toxicology Program)**

319-85-7	(1alpha,2beta,3alpha,4beta,5alpha,6beta)-1,2,3,4,5,6-hexachlorocyclohexane	R
319-86-8	delta-BHC (delta-HCH)	R

· **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.

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 7)

- **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 | UN1993 |
| · UN proper shipping name | |
| · DOT | Flammable liquids, n.o.s. (Hexanes) |
| · IMDG | FLAMMABLE LIQUID, N.O.S. (HEXANES), MARINE POLLUTANT |
| · IATA | FLAMMABLE LIQUID, N.O.S. (HEXANES) |
| · Transport hazard class(es) | |
| · DOT, IATA | |
|  | |
| · Class | 3 Flammable liquids |
| · Label | 3 |
| · IMDG | |
|   | |
| · Class | 3 Flammable liquids |
| · Label | 3 |
| · Packing group | |
| · DOT, IMDG, IATA | II |
| · Environmental hazards: | Product contains environmentally hazardous substances: decachlorobiphenyl, n-hexane |
| · Marine pollutant: | Symbol (fish and tree) |
| · Special precautions for user | Warning: Flammable liquids |

(Contd. on page 9)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 8)

· Danger code (Kemler):	33
· EMS Number:	F-E, <u>S-E</u>
· 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. (HEXANES), 3, II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

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

· Section 355 (extremely hazardous substances):

309-00-2 aldrin (ISO)

· Section 313 (Specific toxic chemical listings):

110-54-3 n-hexane

309-00-2 aldrin (ISO)

· TSCA (Toxic Substances Control Act):

110-54-3 n-hexane

319-85-7 (1 alpha,2 beta,3 alpha,4 beta,5 alpha,6 beta)-1,2,3,4,5,6-hexachlorocyclohexane

319-86-8 delta-BHC (delta-HCH)

· Proposition 65

· Chemicals known to cause cancer:

72-55-9 2,2-bis(p-chlorophenyl)-1,1-dichloroethylene

1024-57-3 heptachlor epoxide - isomer B

319-85-7 (1 alpha,2 beta,3 alpha,4 beta,5 alpha,6 beta)-1,2,3,4,5,6-hexachlorocyclohexane

319-86-8 delta-BHC (delta-HCH)

309-00-2 aldrin (ISO)

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

110-54-3 n-hexane

72-55-9 2,2-bis(p-chlorophenyl)-1,1-dichloroethylene

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

(Contd. of page 9)

Chemicals known to cause developmental toxicity:

72-55-9 2,2-bis(p-chlorophenyl)-1,1-dichloroethylene

Carcinogenic categories
EPA (Environmental Protection Agency)

110-54-3	n-hexane	II
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	B2
1024-57-3	heptachlor epoxide - isomer B	B2
319-85-7	(1alpha,2beta,3alpha,4beta,5alpha,6beta)-1,2,3,4,5,6-hexachlorocyclohexane	C
319-86-8	delta-BHC (delta-HCH)	D
309-00-2	aldrin (ISO)	B2

TLV (Threshold Limit Value established by ACGIH)

1024-57-3	heptachlor epoxide - isomer B	A3
309-00-2	aldrin (ISO)	A3

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

1024-57-3	heptachlor epoxide - isomer B	
309-00-2	aldrin (ISO)	

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

Department issuing SDS: Document Control / Regulatory

Contact: regulatory@ultrasci.com

Date of preparation / last revision 03/31/2019 / 1

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Repr. 2: Reproductive toxicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

(Contd. on page 11)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Pesticides Individual Standard (1X1 mL)

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1

(Contd. of page 10)

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

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 3

Reviewed on 03/22/2019

1 Identification

- **Product identifier**
- **Trade name:** Pesticides Resolution Check Standard (1X1 mL)
- **Part number:** CLP-242-1
- **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.



GHS08 Health hazard

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

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

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 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:**

n-hexane

- **Hazard statements**

Highly flammable liquid and vapor.

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Safety Data Sheet

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Reviewed on 03/22/2019

Trade name: Pesticides Resolution Check Standard (1X1 mL)

(Contd. of page 1)

Causes skin irritation.

Suspected of damaging fertility or the unborn child.

May cause drowsiness or dizziness.

May cause damage to organs through prolonged or repeated exposure.

May be fatal if swallowed and enters airways.

· **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.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Do NOT induce vomiting.

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.

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 occurs: Get medical advice/attention.

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

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:** Not applicable.

· **vPvB:** Not applicable.

US

(Contd. on page 3)

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Trade name: Pesticides Resolution Check Standard (1X1 mL)

(Contd. of page 2)

3 Composition/information on ingredients

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

· Dangerous components:

110-54-3 n-hexane

99.999%

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.
- **After inhalation:** 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.
- **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.

(Contd. on page 4)

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Trade name: Pesticides Resolution Check Standard (1X1 mL)

(Contd. of page 3)

· Protective Action Criteria for Chemicals

· PAC-1:

110-54-3	n-hexane	260 ppm
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	6.5 mg/m ³
60-57-1	dieldrin (ISO)	0.3 mg/m ³
72-43-5	methoxychlor	30 mg/m ³

· PAC-2:

110-54-3	n-hexane	2900* ppm
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	72 mg/m ³
60-57-1	dieldrin (ISO)	6.8 mg/m ³
72-43-5	methoxychlor	150 mg/m ³

· PAC-3:

110-54-3	n-hexane	8600** ppm
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	170 mg/m ³
60-57-1	dieldrin (ISO)	450 mg/m ³
72-43-5	methoxychlor	4,500 mg/m ³

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 item 7.

· Control parameters

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

110-54-3 n-hexane

PEL Long-term value: 1800 mg/m³, 500 ppm

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Trade name: Pesticides Resolution Check Standard (1X1 mL)

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REL Long-term value: 180 mg/m³, 50 ppm

TLV Long-term value: 176 mg/m³, 50 ppm
Skin; BEI

Ingredients with biological limit values:
110-54-3 n-hexane

BEI 0.4 mg/L
Medium: urine
Time: end of shift at end of workweek
Parameter: 2.5-Hexanedione without hydrolysis

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 skin.
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

9 Physical and chemical properties

Information on basic physical and chemical properties
General Information
Appearance:
Form: Fluid

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Trade name: Pesticides Resolution Check Standard (1X1 mL)

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· Color:	Colorless
· Odor:	Characteristic
· Odor threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/Melting range:	-95 °C (-139 °F)
Boiling point/Boiling range:	69 °C (156.2 °F)
· Flash point:	-22 °C (-7.6 °F)
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	240 °C (464 °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:	1.2 Vol %
Upper:	7.4 Vol %
· Vapor pressure at 20 °C (68 °F):	110 hPa (82.5 mm Hg)
· Density at 20 °C (68 °F):	0.7 g/cm ³ (5.8415 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with	
Water at 20 °C (68 °F):	0.1 g/l
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	100.0 %
VOC content:	100.00 %
	700.0 g/l / 5.84 lb/gal
· Solids content:	0.0 %
· 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.

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Trade name: Pesticides Resolution Check Standard (1X1 mL)

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- **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	5,000 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

110-54-3 n-hexane

Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

- **Carcinogenic categories**

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

60-57-1	dieldrin (ISO)	3
72-43-5	methoxychlor	3

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **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.

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- **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** UN1208
- **UN proper shipping name**
- **DOT** Hexanes
- **IMDG** HEXANES, MARINE POLLUTANT
- **IATA** HEXANES
- **Transport hazard class(es)**
- **DOT, IATA**
- 
- **Class** 3 Flammable liquids
- **Label** 3
- **IMDG**
- 

- **Class** 3 Flammable liquids
- **Label** 3
- **Packing group**
- **DOT, IMDG, IATA** II
- **Environmental hazards:** Product contains environmentally hazardous substances: decachlorobiphenyl, n-hexane
- **Marine pollutant:** Symbol (fish and tree)
- **Special precautions for user** Warning: Flammable liquids
- **Danger code (Kemler):** 33
- **EMS Number:** F-E,S-D

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Trade name: Pesticides Resolution Check Standard (1X1 mL)

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· Stowage Category	E
· 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
· Hazardous substance:	5000 lbs, 2270 kg
· 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 1208 HEXANES, 3, II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture	
· Sara	
· Section 355 (extremely hazardous substances):	
None of the ingredients is listed.	
· Section 313 (Specific toxic chemical listings):	
110-54-3	n-hexane
72-43-5	methoxychlor
· TSCA (Toxic Substances Control Act):	
110-54-3	n-hexane
· Proposition 65	
· Chemicals known to cause cancer:	
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene
60-57-1	dieldrin (ISO)
· Chemicals known to cause reproductive toxicity for females:	
None of the ingredients is listed.	
· Chemicals known to cause reproductive toxicity for males:	
110-54-3	n-hexane
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene
· Chemicals known to cause developmental toxicity:	
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene
· Carcinogenic categories	
· EPA (Environmental Protection Agency)	
110-54-3	n-hexane
	II

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72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	B2
60-57-1	dieldrin (ISO)	B2
72-43-5	methoxychlor	D

· TLV (Threshold Limit Value established by ACGIH)

60-57-1	dieldrin (ISO)	(A4)
72-43-5	methoxychlor	A4

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

60-57-1	dieldrin (ISO)	
72-43-5	methoxychlor	

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· Department issuing SDS: Document Control / Regulatory

· Contact: regulatory@ultrasci.com

· Date of preparation / last revision 03/31/2019 / 2

· 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

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Repr. 2: Reproductive toxicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

Asp. Tox. 1: Aspiration hazard – Category 1

· * Data compared to the previous version altered.

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

1 Identification

- **Product identifier**
- **Trade name:** Pesticides Performance Evaluation Standard (1X1 mL)
- **Part number:** CLP-252-1
- **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.



GHS08 Health hazard

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

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

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 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:**
n-hexane
- **Hazard statements**
Highly flammable liquid and vapor.

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Trade name: Pesticides Performance Evaluation Standard (1X1 mL)

(Contd. of page 1)

Causes skin irritation.

Suspected of damaging fertility or the unborn child.

May cause drowsiness or dizziness.

May cause damage to organs through prolonged or repeated exposure.

May be fatal if swallowed and enters airways.

· 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.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Do NOT induce vomiting.

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.

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 occurs: Get medical advice/attention.

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

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:** Not applicable.

· **vPvB:** Not applicable.

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Version Number 2

Reviewed on 03/22/2019

Trade name: Pesticides Performance Evaluation Standard (1X1 mL)

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3 Composition/information on ingredients

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

· Dangerous components:

110-54-3 n-hexane

99.999%

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.
- **After inhalation:** 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.
- **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.

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Trade name: Pesticides Performance Evaluation Standard (1X1 mL)

(Contd. of page 3)

· Protective Action Criteria for Chemicals

· PAC-1:

110-54-3	n-hexane	260 ppm
50-29-3	DDT (common name not adopted by ISO)	3 mg/m ³
72-20-8	endrin (ISO)	1.8 mg/m ³
58-89-9	γ -HCH or γ -BHC	9.1 mg/m ³
72-43-5	methoxychlor	30 mg/m ³

· PAC-2:

110-54-3	n-hexane	2900* ppm
50-29-3	DDT (common name not adopted by ISO)	34 mg/m ³
72-20-8	endrin (ISO)	20 mg/m ³
58-89-9	γ -HCH or γ -BHC	100 mg/m ³
72-43-5	methoxychlor	150 mg/m ³

· PAC-3:

110-54-3	n-hexane	8600** ppm
50-29-3	DDT (common name not adopted by ISO)	210 mg/m ³
72-20-8	endrin (ISO)	2,000 mg/m ³
58-89-9	γ -HCH or γ -BHC	1,000 mg/m ³
72-43-5	methoxychlor	4,500 mg/m ³

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 item 7.

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Version Number 2

Reviewed on 03/22/2019

Trade name: Pesticides Performance Evaluation Standard (1X1 mL)

(Contd. of page 4)

· Control parameters

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

110-54-3 n-hexane

PEL	Long-term value: 1800 mg/m ³ , 500 ppm
REL	Long-term value: 180 mg/m ³ , 50 ppm
TLV	Long-term value: 176 mg/m ³ , 50 ppm
	Skin; BEI

· Ingredients with biological limit values:

110-54-3 n-hexane

BEI	0.4 mg/L
	Medium: urine
	Time: end of shift at end of workweek
	Parameter: 2,5-Hexanedione without hydrolysis

· **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 skin.
- 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

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Trade name: Pesticides Performance Evaluation 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: -95 °C (-139 °F)

Boiling point/Boiling range: 69 °C (156.2 °F)

· Flash point: -22 °C (-7.6 °F)

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 240 °C (464 °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: 1.2 Vol %

Upper: 7.4 Vol %

· Vapor pressure at 20 °C (68 °F): 110 hPa (82.5 mm Hg)

· Density at 20 °C (68 °F): 0.7 g/cm³ (5.8415 lbs/gal)

· Relative density: Not determined.

· Vapor density: Not determined.

· Evaporation rate: Not determined.

· Solubility in / Miscibility with

Water at 20 °C (68 °F): 0.1 g/l

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

· Viscosity:

Dynamic: Not determined.

Kinematic: Not determined.

· Solvent content:

Organic solvents: 100.0 %

VOC content: 100.00 %

1,000.0 g/l / 8.35 lb/gal

· Other information: No further relevant information available.

10 Stability and reactivity

· Reactivity: No further relevant information available.

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Trade name: Pesticides Performance Evaluation Standard (1X1 mL)

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- **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	5,000 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

110-54-3 n-hexane

Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	3,000 mg/kg (rabbit)

· Primary irritant effect:

· **on the skin:** Irritant to skin and mucous membranes.

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

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

· Additional toxicological information:

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

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

50-29-3	DDT (common name not adopted by ISO)	2A
72-20-8	endrin (ISO)	3
319-84-6	alpha-BHC (alpha-HCH)	2B
319-85-7	(1alpha,2beta,3alpha,4beta,5alpha,6beta)-1,2,3,4,5,6-hexachlorocyclohexane	2B
58-89-9	gamma -HCH or gamma -BHC	1
72-43-5	methoxychlor	3

· NTP (National Toxicology Program)

50-29-3	DDT (common name not adopted by ISO)	R
319-84-6	alpha-BHC (alpha-HCH)	R
319-85-7	(1alpha,2beta,3alpha,4beta,5alpha,6beta)-1,2,3,4,5,6-hexachlorocyclohexane	R
58-89-9	gamma -HCH or gamma -BHC	R

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

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Trade name: Pesticides Performance Evaluation Standard (1X1 mL)

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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 minimus Quantities | - |
| · UN-Number | |
| · DOT, IMDG, IATA | UN1993 |
| · UN proper shipping name | |
| · DOT | Flammable liquids, n.o.s. (Hexanes) |
| · IMDG | FLAMMABLE LIQUID, N.O.S. (HEXANES), MARINE POLLUTANT |
| · IATA | FLAMMABLE LIQUID, N.O.S. (HEXANES) |
| · Transport hazard class(es) | |
| · DOT, IATA | |
|  | |
| · Class | 3 Flammable liquids |

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Trade name: Pesticides Performance Evaluation Standard (1X1 mL)

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· Label	3
· IMDG	
 	
· Class	3 Flammable liquids
· Label	3
· Packing group	
· DOT, IMDG, IATA	II
· Environmental hazards:	Product contains environmentally hazardous substances: decachlorobiphenyl, n-hexane
· Marine pollutant:	Symbol (fish and tree)
· Special precautions for user	Warning: Flammable liquids
· Danger code (Kemler):	33
· EMS Number:	F-E, S-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. (HEXANES), 3, II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

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

· Section 355 (extremely hazardous substances):

72-20-8	endrin (ISO)
58-89-9	γ -HCH or γ -BHC

· Section 313 (Specific toxic chemical listings):

110-54-3	n-hexane
319-84-6	alpha-BHC (alpha-HCH)
58-89-9	γ -HCH or γ -BHC
72-43-5	methoxychlor

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· TSCA (Toxic Substances Control Act):

110-54-3	n-hexane
50-29-3	DDT (common name not adopted by ISO)
319-84-6	alpha-BHC (alpha-HCH)
319-85-7	(1alpha,2β,3alpha,4β,5alpha,6β)-1,2,3,4,5,6-hexachlorocyclohexane
58-89-9	γ -HCH or γ -BHC

· Proposition 65
· Chemicals known to cause cancer:

50-29-3	DDT (common name not adopted by ISO)
319-84-6	alpha-BHC (alpha-HCH)
319-85-7	(1alpha,2β,3alpha,4β,5alpha,6β)-1,2,3,4,5,6-hexachlorocyclohexane
58-89-9	γ -HCH or γ -BHC

· Chemicals known to cause reproductive toxicity for females:

50-29-3	DDT (common name not adopted by ISO)
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· Chemicals known to cause reproductive toxicity for males:

110-54-3	n-hexane
50-29-3	DDT (common name not adopted by ISO)

· Chemicals known to cause developmental toxicity:

50-29-3	DDT (common name not adopted by ISO)
72-20-8	endrin (ISO)

· Carcinogenic categories
· EPA (Environmental Protection Agency)

110-54-3	n-hexane	II
50-29-3	DDT (common name not adopted by ISO)	B2
72-20-8	endrin (ISO)	D
319-84-6	alpha-BHC (alpha-HCH)	B2
319-85-7	(1alpha,2β,3alpha,4β,5alpha,6β)-1,2,3,4,5,6-hexachlorocyclohexane	C
72-43-5	methoxychlor	D

· TLV (Threshold Limit Value established by ACGIH)

50-29-3	DDT (common name not adopted by ISO)	A3
72-20-8	endrin (ISO)	A4
58-89-9	γ -HCH or γ -BHC	A3
72-43-5	methoxychlor	A4

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

50-29-3	DDT (common name not adopted by ISO)
72-43-5	methoxychlor

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· **Department issuing SDS:** Document Control / Regulatory

· **Contact:** regulatory@ultrasci.com

· **Date of preparation / last revision** 03/31/2019 / 1

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Repr. 2: Reproductive toxicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

Asp. Tox. 1: Aspiration hazard – Category 1

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

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Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 3

Reviewed on 03/22/2019

1 Identification

- **Product identifier**
- **Trade name:** Aroclors 1016 and 1260 Standard (1X1 mL)
- **Part number:** CLP-281-1
- **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.



GHS08 Health hazard

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 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:**
2,2,4-trimethylpentane
- **Hazard statements**
Highly flammable liquid and vapor.
Causes skin irritation.
May cause drowsiness or dizziness.

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Trade name: Aroclors 1016 and 1260 Standard (1X1 mL)

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May be fatal if swallowed and enters airways.

· **Precautionary statements**

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.

Avoid breathing dust/fume/gas/mist/vapors/spray

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Do NOT induce vomiting.

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.

Call a poison center/doctor if you feel unwell.

Take off contaminated clothing and wash it before reuse.

If skin irritation occurs: Get medical advice/attention.

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

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:** 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:**

540-84-1	2,2,4-trimethylpentane	100.0%
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Trade name: Aroclors 1016 and 1260 Standard (1X1 mL)

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4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** 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.
- **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 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:

540-84-1	2,2,4-trimethylpentane	230 ppm
12674-11-2	Aroclor 1016 (PCB 1016)	5.6 mg/m ³
11096-82-5	aroclor 1260	0.41 mg/m ³

· PAC-2:

540-84-1	2,2,4-trimethylpentane	830 ppm
12674-11-2	Aroclor 1016 (PCB 1016)	62 mg/m ³
11096-82-5	aroclor 1260	4.5 mg/m ³

· PAC-3:

540-84-1	2,2,4-trimethylpentane	5000* ppm
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Trade name: Aroclors 1016 and 1260 Standard (1X1 mL)

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12674-11-2	Aroclor 1016 (PCB 1016)	460 mg/m ³
11096-82-5	aroclor 1260	260 mg/m ³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **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:
540-84-1 2,2,4-trimethylpentane

PEL	Long-term value: 2350 mg/m ³ , 500 ppm n-Octane only
TLV	Long-term value: 1401 mg/m ³ , 300 ppm

- **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.
Avoid contact with the skin.
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

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Trade name: Aroclors 1016 and 1260 Standard (1X1 mL)

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direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

· **Material of gloves**

For normal use: nitrile rubber, 11-13 mil thickness

For direct contact with the chemical: butyl rubber, 12-15 mil thickness

· **Penetration time of glove material**

For normal use: nitrile rubber: 1 hour

For direct contact with the chemical: butyl rubber: >4 hours

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Fluid

Color: Colorless

· **Odor:** Nearly odorless

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: -107 °C (-160.6 °F)

Boiling point/Boiling range: 99 °C (210.2 °F)

· **Flash point:** -12 °C (10.4 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 410 °C (770 °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: 1.1 Vol %

Upper: 6 Vol %

· **Vapor pressure at 20 °C (68 °F):** 41.25 hPa (30.9 mm Hg)

· **Density at 20 °C (68 °F):** 0.692 g/cm³ (5.77474 lbs/gal)

· **Relative density** Not determined.

· **Vapor density** Not determined.

· **Evaporation rate** Not determined.

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Trade name: Aroclors 1016 and 1260 Standard (1X1 mL)

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- | | |
|---|--|
| · 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: | 100.0 % |
| VOC content: | 100.00 % |
| | 1,000.0 g/l / 8.35 lb/gal |
| · Other information | No further relevant information available. |

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>33.5 mg/L (rat)

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

Oral	LD50	>5,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>33.52 mg/L (rat)

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** No irritating effect.
 - **Sensitization:** No sensitizing effects known.
 - **Additional toxicological information:**
- The product shows the following dangers according to internally approved calculation methods for preparations:
- Irritant

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· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

12674-11-2 Aroclor 1016 (PCB 1016)

R

11096-82-5 aroclor 1260

R

· 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 minimus Quantities**

-

· UN-Number

· **DOT, IMDG, IATA**

UN1262

· UN proper shipping name

· **DOT**

Octanes

· **IMDG**

OCTANES, MARINE POLLUTANT

· **IATA**

OCTANES

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Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 3

Reviewed on 03/22/2019

Trade name: Aroclors 1016 and 1260 Standard (1X1 mL)

(Contd. of page 7)

· **Transport hazard class(es)**

· **DOT, IATA**

· **Class**

3 Flammable liquids

· **Label**

3

· **IMDG**

· **Class**

3 Flammable liquids

· **Label**

3

· **Packing group**

· **DOT, IMDG, IATA**

II

· **Environmental hazards:**

Product contains environmentally hazardous substances: 2,2,4-trimethylpentane

· **Marine pollutant:**

Symbol (fish and tree)

· **Special precautions for user**

Warning: Flammable liquids

· **Danger code (Kemler):**

33

· **EMS Number:**

F-E,S-E

· **Stowage Category**

B

· **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: 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 1262 OCTANES, 3, II, ENVIRONMENTALLY HAZARDOUS

US

(Contd. on page 9)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

Version Number 3

Reviewed on 03/22/2019

Trade name: Aroclors 1016 and 1260 Standard (1X1 mL)

(Contd. of page 8)

15 Regulatory information

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

· Sara

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

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

· Proposition 65

· Chemicals known to cause cancer:

11096-82-5 aroclor 1260

· 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)

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

II

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

· 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: regulatory@ultrasci.com

· Date of preparation / last revision 03/31/2019 / 2

· 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)

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Safety Data Sheet
acc. to OSHA HCS

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Reviewed on 03/22/2019

Trade name: Aroclors 1016 and 1260 Standard (1X1 mL)

(Contd. of page 9)

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
Flam. Liq. 2: Flammable liquids – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Asp. Tox. 1: Aspiration hazard – Category 1

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

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

1 Identification

- **Product identifier**
- **Trade name:** Aroclor 1221 Standard (1X1 mL)
- **Part number:** CLP-282-1
- **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.



GHS08 Health hazard

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 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:**

2,2,4-trimethylpentane

- **Hazard statements**

Highly flammable liquid and vapor.

Causes skin irritation.

May cause drowsiness or dizziness.

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1221 Standard (1X1 mL)

(Contd. of page 1)

May be fatal if swallowed and enters airways.

· **Precautionary statements**

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.

Avoid breathing dust/fume/gas/mist/vapors/spray

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Do NOT induce vomiting.

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.

Call a poison center/doctor if you feel unwell.

Take off contaminated clothing and wash it before reuse.

If skin irritation occurs: Get medical advice/attention.

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

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:** 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:**

540-84-1	2,2,4-trimethylpentane	100.0%
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US

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1221 Standard (1X1 mL)

(Contd. of page 2)

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** 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.
- **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 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:

540-84-1	2,2,4-trimethylpentane	230 ppm
11104-28-2	Aroclor 1221 (PCB 1221)	12 mg/m ³

· PAC-2:

540-84-1	2,2,4-trimethylpentane	830 ppm
11104-28-2	Aroclor 1221 (PCB 1221)	130 mg/m ³

· PAC-3:

540-84-1	2,2,4-trimethylpentane	5000* ppm
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(Contd. on page 4)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

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Reviewed on 03/22/2019

Trade name: Aroclor 1221 Standard (1X1 mL)

11104-28-2 Aroclor 1221 (PCB 1221)

(Contd. of page 3)

790 mg/m³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **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:

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

PEL	Long-term value: 2350 mg/m ³ , 500 ppm n-Octane only
TLV	Long-term value: 1401 mg/m ³ , 300 ppm

- **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.
Avoid contact with the skin.
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

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Trade name: Aroclor 1221 Standard (1X1 mL)

(Contd. of page 4)

exceeding 4 hrs. Supplier recommendations should be followed.

· **Material of gloves**

For normal use: nitrile rubber, 11-13 mil thickness

For direct contact with the chemical: butyl rubber, 12-15 mil thickness

· **Penetration time of glove material**

For normal use: nitrile rubber: 1 hour

For direct contact with the chemical: butyl rubber: >4 hours

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Fluid

Color: Colorless

· **Odor:** Nearly odorless

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: -107 °C (-160.6 °F)

Boiling point/Boiling range: 99 °C (210.2 °F)

· **Flash point:** -12 °C (10.4 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 410 °C (770 °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: 1.1 Vol %

Upper: 6 Vol %

· **Vapor pressure at 20 °C (68 °F):** 41.25 hPa (30.9 mm Hg)

· **Density at 20 °C (68 °F):** 0.692 g/cm³ (5.77474 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.

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Safety Data Sheet acc. to OSHA HCS

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Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1221 Standard (1X1 mL)

(Contd. of page 5)

- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic:** Not determined.
 - Kinematic:** Not determined.
- **Solvent content:**
 - Organic solvents:** 100.0 %
 - VOC content:** 100.00 %
 - 1,000.0 g/l / 8.35 lb/gal
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>33.5 mg/L (rat)

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

Oral	LD50	>5,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>33.52 mg/L (rat)

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

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

Irritant

- **Carcinogenic categories**

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

None of the ingredients is listed.

(Contd. on page 7)

Safety Data Sheet

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Reviewed on 03/22/2019

Trade name: Aroclor 1221 Standard (1X1 mL)

(Contd. of page 6)

· NTP (National Toxicology Program)

None of the ingredients is listed.

· 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 minimus Quantities -

· UN-Number
· DOT, IMDG, IATA UN1262

· UN proper shipping name
· DOT Octanes mixture

· IMDG OCTANES mixture, MARINE POLLUTANT

· IATA OCTANES mixture

(Contd. on page 8)

US

Safety Data Sheet acc. to OSHA HCS

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Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1221 Standard (1X1 mL)

(Contd. of page 7)

· Transport hazard class(es)

· DOT, IATA



· Class

3 Flammable liquids

· Label

3

· IMDG



· Class

3 Flammable liquids

· Label

3

· Packing group

· DOT, IMDG, IATA

II

· Environmental hazards:

Product contains environmentally hazardous substances: 2,2,4-trimethylpentane

· Marine pollutant:

Symbol (fish and tree)

· Special precautions for user

Warning: Flammable liquids

· Danger code (Kemler):

33

· EMS Number:

F-E,S-E

· Stowage Category

B

· 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: 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 1262 OCTANES MIXTURE, 3, II, ENVIRONMENTALLY HAZARDOUS

US

(Contd. on page 9)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1221 Standard (1X1 mL)

(Contd. of page 8)

15 Regulatory information

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

· Sara

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

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

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· 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)

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

II

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

· 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: regulatory@ultrasci.com

· Date of preparation / last revision 03/31/2019 / 1

· Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

(Contd. on page 10)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1221 Standard (1X1 mL)

(Contd. of page 9)

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
Flam. Liq. 2: Flammable liquids – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Asp. Tox. 1: Aspiration hazard – Category 1

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

US

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

1 Identification

- **Product identifier**
- **Trade name:** Aroclor 1232 Standard (1X1 mL)
- **Part number:** CLP-283-1
- **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.



GHS08 Health hazard

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 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:**

2,2,4-trimethylpentane

- **Hazard statements**

Highly flammable liquid and vapor.

Causes skin irritation.

May cause drowsiness or dizziness.

(Contd. on page 2)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1232 Standard (1X1 mL)

(Contd. of page 1)

May be fatal if swallowed and enters airways.

Precautionary statements

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.

Avoid breathing dust/fume/gas/mist/vapors/spray

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Do NOT induce vomiting.

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.

Call a poison center/doctor if you feel unwell.

Take off contaminated clothing and wash it before reuse.

If skin irritation occurs: Get medical advice/attention.

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

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: 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:

540-84-1	2,2,4-trimethylpentane	100.0%
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US

(Contd. on page 3)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1232 Standard (1X1 mL)

(Contd. of page 2)

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** 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.
- **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 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:

540-84-1	2,2,4-trimethylpentane	230 ppm
11141-16-5	Aroclor 1232 (PCB 1232)	13 mg/m ³

· PAC-2:

540-84-1	2,2,4-trimethylpentane	830 ppm
11141-16-5	Aroclor 1232 (PCB 1232)	150 mg/m ³

· PAC-3:

540-84-1	2,2,4-trimethylpentane	5000* ppm
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Trade name: Aroclor 1232 Standard (1X1 mL)

11141-16-5 Aroclor 1232 (PCB 1232)

(Contd. of page 3)

890 mg/m³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **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:

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

PEL	Long-term value: 2350 mg/m ³ , 500 ppm n-Octane only
TLV	Long-term value: 1401 mg/m ³ , 300 ppm

- **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.
Avoid contact with the skin.
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

(Contd. on page 5)

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Trade name: Aroclor 1232 Standard (1X1 mL)

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exceeding 4 hrs. Supplier recommendations should be followed.

· **Material of gloves**

For normal use: nitrile rubber, 11-13 mil thickness

For direct contact with the chemical: butyl rubber, 12-15 mil thickness

· **Penetration time of glove material**

For normal use: nitrile rubber: 1 hour

For direct contact with the chemical: butyl rubber: >4 hours

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Fluid

Color: Colorless

· **Odor:** Nearly odorless

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: -107 °C (-160.6 °F)

Boiling point/Boiling range: 99 °C (210.2 °F)

· **Flash point:** -12 °C (10.4 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 410 °C (770 °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: 1.1 Vol %

Upper: 6 Vol %

· **Vapor pressure at 20 °C (68 °F):** 41.25 hPa (30.9 mm Hg)

· **Density at 20 °C (68 °F):** 0.692 g/cm³ (5.77474 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.

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- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic:** Not determined.
 - Kinematic:** Not determined.
- **Solvent content:**
 - Organic solvents:** 100.0 %
 - VOC content:** 100.00 %
 - 1,000.0 g/l / 8.35 lb/gal
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

LD/LC50 values that are relevant for classification:
ATE (Acute Toxicity Estimate)

Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>33.5 mg/L (rat)

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

Oral	LD50	>5,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>33.52 mg/L (rat)

- **Primary irritant effect:**
 - on the skin:** Irritant to skin and mucous membranes.
 - on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

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

- **Carcinogenic categories**

IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

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· NTP (National Toxicology Program)

None of the ingredients is listed.

· 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 minimus Quantities -

· UN-Number
· DOT, IMDG, IATA UN1262

· UN proper shipping name
· DOT Octanes mixture

· IMDG OCTANES mixture, MARINE POLLUTANT

· IATA OCTANES mixture

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Trade name: Aroclor 1232 Standard (1X1 mL)

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· Transport hazard class(es)

· DOT, IATA



· Class

3 Flammable liquids

· Label

3

· IMDG



· Class

3 Flammable liquids

· Label

3

· Packing group

· DOT, IMDG, IATA

II

· Environmental hazards:

Product contains environmentally hazardous substances: 2,2,4-trimethylpentane

· Marine pollutant:

Symbol (fish and tree)

· Special precautions for user

Warning: Flammable liquids

· Danger code (Kemler):

33

· EMS Number:

F-E,S-E

· Stowage Category

B

· 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: 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 1262 OCTANES MIXTURE, 3, II, ENVIRONMENTALLY HAZARDOUS

US

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15 Regulatory information

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

· Sara

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

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

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **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)**

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

II

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

None of the ingredients is listed.

· **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:** regulatory@ultrasci.com

· **Date of preparation / last revision** 03/31/2019 / 1

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

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Trade name: Aroclor 1232 Standard (1X1 mL)

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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
Flam. Liq. 2: Flammable liquids – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Asp. Tox. 1: Aspiration hazard – Category 1

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

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1 Identification

- **Product identifier**
- **Trade name:** Aroclor 1242 Standard (1X1 mL)
- **Part number:** CLP-284-1
- **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.



GHS08 Health hazard

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 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:**

2,2,4-trimethylpentane

- **Hazard statements**

Highly flammable liquid and vapor.

Causes skin irritation.

May cause drowsiness or dizziness.

(Contd. on page 2)

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Trade name: Aroclor 1242 Standard (1X1 mL)

(Contd. of page 1)

May be fatal if swallowed and enters airways.

· **Precautionary statements**

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.

Avoid breathing dust/fume/gas/mist/vapors/spray

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Do NOT induce vomiting.

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.

Call a poison center/doctor if you feel unwell.

Take off contaminated clothing and wash it before reuse.

If skin irritation occurs: Get medical advice/attention.

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

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:** 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:**

540-84-1	2,2,4-trimethylpentane	100.0%
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US

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Trade name: Aroclor 1242 Standard (1X1 mL)

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4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** 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.
- **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 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:

540-84-1	2,2,4-trimethylpentane	230 ppm
53469-21-9	Aroclor 1242 (PCB 1242)	3 mg/m ³

· PAC-2:

540-84-1	2,2,4-trimethylpentane	830 ppm
53469-21-9	Aroclor 1242 (PCB 1242)	140 mg/m ³

· PAC-3:

540-84-1	2,2,4-trimethylpentane	5000* ppm
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Trade name: Aroclor 1242 Standard (1X1 mL)

(Contd. of page 3)

53469-21-9 Aroclor 1242 (PCB 1242)

840 mg/m³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **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:

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

PEL	Long-term value: 2350 mg/m ³ , 500 ppm n-Octane only
TLV	Long-term value: 1401 mg/m ³ , 300 ppm

- **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.
Avoid contact with the skin.
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

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exceeding 4 hrs. Supplier recommendations should be followed.

· **Material of gloves**

For normal use: nitrile rubber, 11-13 mil thickness

For direct contact with the chemical: butyl rubber, 12-15 mil thickness

· **Penetration time of glove material**

For normal use: nitrile rubber: 1 hour

For direct contact with the chemical: butyl rubber: >4 hours

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Fluid

Color: Colorless

· **Odor:** Nearly odorless

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: -107 °C (-160.6 °F)

Boiling point/Boiling range: 99 °C (210.2 °F)

· **Flash point:** -12 °C (10.4 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 410 °C (770 °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: 1.1 Vol %

Upper: 6 Vol %

· **Vapor pressure at 20 °C (68 °F):** 41.25 hPa (30.9 mm Hg)

· **Density at 20 °C (68 °F):** 0.692 g/cm³ (5.77474 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.

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Safety Data Sheet acc. to OSHA HCS

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Version Number 2

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Trade name: Aroclor 1242 Standard (1X1 mL)

(Contd. of page 5)

- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic:** Not determined.
 - Kinematic:** Not determined.
- **Solvent content:**
 - Organic solvents:** 100.0 %
 - VOC content:** 100.00 %
 - 1,000.0 g/l / 8.35 lb/gal
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>33.5 mg/L (rat)

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

Oral	LD50	>5,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>33.52 mg/L (rat)

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

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

- **Carcinogenic categories**

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

53469-21-9 Aroclor 1242 (PCB 1242)

2A

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Trade name: Aroclor 1242 Standard (1X1 mL)

(Contd. of page 6)

· NTP (National Toxicology Program)

None of the ingredients is listed.

· 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 minimus Quantities** -**· UN-Number****· DOT, IMDG, IATA**

UN1993

· UN proper shipping name**· DOT****· IMDG****· IATA**

Flammable liquids, n.o.s. (Octanes)

FLAMMABLE LIQUID, N.O.S. (OCTANES), MARINE
POLLUTANT

FLAMMABLE LIQUID, N.O.S. (OCTANES)

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Trade name: Aroclor 1242 Standard (1X1 mL)

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· **Transport hazard class(es)**

· **DOT, IATA**

· **Class**

3 Flammable liquids

· **Label**

3

· **IMDG**

· **Class**

3 Flammable liquids

· **Label**

3

· **Packing group**

· **DOT, IMDG, IATA**

II

· **Environmental hazards:**

Product contains environmentally hazardous substances: 2,2,4-trimethylpentane

· **Marine pollutant:**

Symbol (fish and tree)

· **Special precautions for user**

Warning: Flammable liquids

· **Danger code (Kemler):**

33

· **EMS Number:**

F-E,S-E

· **Stowage Category**

B

· **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: 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. (OCTANES), 3, II, ENVIRONMENTALLY HAZARDOUS

US

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Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1242 Standard (1X1 mL)

(Contd. of page 8)

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Sara**

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

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

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **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)**

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

II

53469-21-9 Aroclor 1242 (PCB 1242)

B2

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

None of the ingredients is listed.

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

53469-21-9 Aroclor 1242 (PCB 1242)

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· **Department issuing SDS:** Document Control / Regulatory

· **Contact:** regulatory@ultrasci.com

· **Date of preparation / last revision** 03/31/2019 / 1

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

(Contd. on page 10)

Safety Data Sheet
acc. to OSHA HCS

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Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1242 Standard (1X1 mL)

(Contd. of page 9)

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
Flam. Liq. 2: Flammable liquids – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Asp. Tox. 1: Aspiration hazard – Category 1

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

US

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

1 Identification

- **Product identifier**
- **Trade name:** Aroclor 1248 Standard (1X1 mL)
- **Part number:** CLP-285-1
- **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.



GHS08 Health hazard

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 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:**

2,2,4-trimethylpentane

- **Hazard statements**

Highly flammable liquid and vapor.

Causes skin irritation.

May cause drowsiness or dizziness.

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1248 Standard (1X1 mL)

(Contd. of page 1)

May be fatal if swallowed and enters airways.

· **Precautionary statements**

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.

Avoid breathing dust/fume/gas/mist/vapors/spray

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Do NOT induce vomiting.

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.

Call a poison center/doctor if you feel unwell.

Take off contaminated clothing and wash it before reuse.

If skin irritation occurs: Get medical advice/attention.

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

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:** 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:**

540-84-1	2,2,4-trimethylpentane	100.0%
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US

(Contd. on page 3)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1248 Standard (1X1 mL)

(Contd. of page 2)

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** 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.
- **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 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:

540-84-1	2,2,4-trimethylpentane	230 ppm
12672-29-6	Aroclor 1248 (PCB 1248)	6.6 mg/m ³

· PAC-2:

540-84-1	2,2,4-trimethylpentane	830 ppm
12672-29-6	Aroclor 1248 (PCB 1248)	72 mg/m ³

· PAC-3:

540-84-1	2,2,4-trimethylpentane	5000* ppm
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(Contd. on page 4)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1248 Standard (1X1 mL)

12672-29-6 Aroclor 1248 (PCB 1248)

(Contd. of page 3)

2,200 mg/m³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **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:

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

PEL	Long-term value: 2350 mg/m ³ , 500 ppm n-Octane only
TLV	Long-term value: 1401 mg/m ³ , 300 ppm

- **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.
Avoid contact with the skin.
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

(Contd. on page 5)

Safety Data Sheet

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Reviewed on 03/22/2019

Trade name: Aroclor 1248 Standard (1X1 mL)

(Contd. of page 4)

exceeding 4 hrs. Supplier recommendations should be followed.

· **Material of gloves**

For normal use: nitrile rubber, 11-13 mil thickness

For direct contact with the chemical: butyl rubber, 12-15 mil thickness

· **Penetration time of glove material**

For normal use: nitrile rubber: 1 hour

For direct contact with the chemical: butyl rubber: >4 hours

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Fluid

Color: Colorless

· **Odor:** Nearly odorless

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: -107 °C (-160.6 °F)

Boiling point/Boiling range: 99 °C (210.2 °F)

· **Flash point:** -12 °C (10.4 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 410 °C (770 °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: 1.1 Vol %

Upper: 6 Vol %

· **Vapor pressure at 20 °C (68 °F):** 41.25 hPa (30.9 mm Hg)

· **Density at 20 °C (68 °F):** 0.692 g/cm³ (5.77474 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.

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Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1248 Standard (1X1 mL)

(Contd. of page 5)

- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic:** Not determined.
 - Kinematic:** Not determined.
- **Solvent content:**
 - Organic solvents:** 100.0 %
 - VOC content:** 100.00 %
 - 1,000.0 g/l / 8.35 lb/gal
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>33.5 mg/L (rat)

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

Oral	LD50	>5,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>33.52 mg/L (rat)

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

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

Irritant

- **Carcinogenic categories**

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

None of the ingredients is listed.

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1248 Standard (1X1 mL)

(Contd. of page 6)

· NTP (National Toxicology Program)

None of the ingredients is listed.

· 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 minimus Quantities -

· UN-Number
· DOT, IMDG, IATA UN1262

· UN proper shipping name
· DOT Octanes mixture

· IMDG OCTANES mixture, MARINE POLLUTANT

· IATA OCTANES mixture

(Contd. on page 8)

US

Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1248 Standard (1X1 mL)

(Contd. of page 7)

· **Transport hazard class(es)**

· **DOT, IATA**

· **Class**

3 Flammable liquids

· **Label**

3

· **IMDG**

· **Class**

3 Flammable liquids

· **Label**

3

· **Packing group**

· **DOT, IMDG, IATA**

II

· **Environmental hazards:**

Product contains environmentally hazardous substances: 2,2,4-trimethylpentane

· **Marine pollutant:**

Symbol (fish and tree)

· **Special precautions for user**

Warning: Flammable liquids

· **Danger code (Kemler):**

33

· **EMS Number:**

F-E,S-E

· **Stowage Category**

B

· **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: 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 1262 OCTANES MIXTURE, 3, II, ENVIRONMENTALLY HAZARDOUS

US

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1248 Standard (1X1 mL)

(Contd. of page 8)

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Sara**

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

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

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **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)**

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

II

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

None of the ingredients is listed.

· **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:** regulatory@ultrasci.com

· **Date of preparation / last revision** 03/31/2019 / 1

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

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Safety Data Sheet
acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Aroclor 1248 Standard (1X1 mL)

(Contd. of page 9)

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
Flam. Liq. 2: Flammable liquids – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Asp. Tox. 1: Aspiration hazard – Category 1

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

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 3

Reviewed on 03/22/2019

1 Identification

- **Product identifier**
- **Trade name:** Aroclor 1254 Standard (1X1 mL)
- **Part number:** CLP-286-1
- **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.



GHS08 Health hazard

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 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:**
2,2,4-trimethylpentane
- **Hazard statements**
Highly flammable liquid and vapor.
Causes skin irritation.
May cause drowsiness or dizziness.

(Contd. on page 2)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

Version Number 3

Reviewed on 03/22/2019

Trade name: Aroclor 1254 Standard (1X1 mL)

(Contd. of page 1)

May be fatal if swallowed and enters airways.

· Precautionary statements

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.

Avoid breathing dust/fume/gas/mist/vapors/spray

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Do NOT induce vomiting.

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.

Call a poison center/doctor if you feel unwell.

Take off contaminated clothing and wash it before reuse.

If skin irritation occurs: Get medical advice/attention.

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

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: 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:

540-84-1	2,2,4-trimethylpentane	100.0%
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US

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 3

Reviewed on 03/22/2019

Trade name: Aroclor 1254 Standard (1X1 mL)

(Contd. of page 2)

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** 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.
- **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 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:

540-84-1	2,2,4-trimethylpentane	230 ppm
11097-69-1	Aroclor 1254 (PCB 1254)	1.5 mg/m ³

· PAC-2:

540-84-1	2,2,4-trimethylpentane	830 ppm
11097-69-1	Aroclor 1254 (PCB 1254)	68 mg/m ³

· PAC-3:

540-84-1	2,2,4-trimethylpentane	5000* ppm
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(Contd. on page 4)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

Version Number 3

Reviewed on 03/22/2019

Trade name: Aroclor 1254 Standard (1X1 mL)

(Contd. of page 3)

11097-69-1 Aroclor 1254 (PCB 1254)

200 mg/m³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **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:

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

PEL	Long-term value: 2350 mg/m ³ , 500 ppm n-Octane only
TLV	Long-term value: 1401 mg/m ³ , 300 ppm

- **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.
Avoid contact with the skin.
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

(Contd. on page 5)

Safety Data Sheet

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Trade name: Aroclor 1254 Standard (1X1 mL)

(Contd. of page 4)

exceeding 4 hrs. Supplier recommendations should be followed.

· **Material of gloves**

For normal use: nitrile rubber, 11-13 mil thickness

For direct contact with the chemical: butyl rubber, 12-15 mil thickness

· **Penetration time of glove material**

For normal use: nitrile rubber: 1 hour

For direct contact with the chemical: butyl rubber: >4 hours

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Fluid

Color: Colorless

· **Odor:** Nearly odorless

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: -107 °C (-160.6 °F)

Boiling point/Boiling range: 99 °C (210.2 °F)

· **Flash point:** -12 °C (10.4 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 410 °C (770 °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: 1.1 Vol %

Upper: 6 Vol %

· **Vapor pressure at 20 °C (68 °F):** 41.25 hPa (30.9 mm Hg)

· **Density at 20 °C (68 °F):** 0.692 g/cm³ (5.77474 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.

(Contd. on page 6)

Safety Data Sheet acc. to OSHA HCS

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Version Number 3

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Trade name: Aroclor 1254 Standard (1X1 mL)

(Contd. of page 5)

- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic:** Not determined.
 - Kinematic:** Not determined.
- **Solvent content:**
 - Organic solvents:** 100.0 %
 - VOC content:** 100.00 %
 - 1,000.0 g/l / 8.35 lb/gal
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>33.5 mg/L (rat)

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

Oral	LD50	>5,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>33.52 mg/L (rat)

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

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

- **Carcinogenic categories**

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

11097-69-1 Aroclor 1254 (PCB 1254)

2A

(Contd. on page 7)

Safety Data Sheet acc. to OSHA HCS

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Trade name: Aroclor 1254 Standard (1X1 mL)

(Contd. of page 6)

· NTP (National Toxicology Program)

11097-69-1 Aroclor 1254 (PCB 1254)

R

· 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 minimus Quantities** -

· **UN-Number**

· **DOT, IMDG, IATA**

UN1262

· **UN proper shipping name**

· **DOT**

· **IMDG**

· **IATA**

Octanes solution

OCTANES solution, MARINE POLLUTANT

OCTANES solution

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US

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Trade name: Aroclor 1254 Standard (1X1 mL)

(Contd. of page 7)

· Transport hazard class(es)

· DOT, IATA



· Class

3 Flammable liquids

· Label

3

· IMDG



· Class

3 Flammable liquids

· Label

3

· Packing group

· DOT, IMDG, IATA

II

· Environmental hazards:

Product contains environmentally hazardous substances: 2,2,4-trimethylpentane

· Marine pollutant:

Symbol (fish and tree)

· Special precautions for user

Warning: Flammable liquids

· Danger code (Kemler):

33

· EMS Number:

F-E,S-E

· Stowage Category

B

· 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: 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 1262 OCTANES SOLUTION, 3, II, ENVIRONMENTALLY HAZARDOUS

US

(Contd. on page 9)

Safety Data Sheet acc. to OSHA HCS

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Trade name: Aroclor 1254 Standard (1X1 mL)

(Contd. of page 8)

15 Regulatory information

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

· Sara

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

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

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· 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)

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

II

11097-69-1 Aroclor 1254 (PCB 1254)

B2

· TLV (Threshold Limit Value established by ACGIH)

11097-69-1 Aroclor 1254 (PCB 1254)

A3

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

11097-69-1 Aroclor 1254 (PCB 1254)

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· Department issuing SDS: Document Control / Regulatory

· Contact: regulatory@ultrasci.com

· Date of preparation / last revision 03/31/2019 / 2

· 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)

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Trade name: Aroclor 1254 Standard (1X1 mL)

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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
Flam. Liq. 2: Flammable liquids – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Asp. Tox. 1: Aspiration hazard – Category 1

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

US

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

1 Identification

- **Product identifier**
- **Trade name:** Toxaphene Standard (1X1 mL)
- **Part number:** CLP-287-1
- **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.



GHS08 Health hazard

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 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:**

2,2,4-trimethylpentane

- **Hazard statements**

Highly flammable liquid and vapor.

Causes skin irritation.

May cause drowsiness or dizziness.

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

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Reviewed on 03/22/2019

Trade name: Toxaphene Standard (1X1 mL)

(Contd. of page 1)

May be fatal if swallowed and enters airways.

· **Precautionary statements**

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.

Avoid breathing dust/fume/gas/mist/vapors/spray

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Do NOT induce vomiting.

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.

Call a poison center/doctor if you feel unwell.

Take off contaminated clothing and wash it before reuse.

If skin irritation occurs: Get medical advice/attention.

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

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:** 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:**

540-84-1	2,2,4-trimethylpentane	100.0%
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US

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Toxaphene Standard (1X1 mL)

(Contd. of page 2)

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** 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.
- **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 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:**

540-84-1	2,2,4-trimethylpentane	230 ppm
8001-35-2	Toxaphene	1 mg/m ³

· **PAC-2:**

540-84-1	2,2,4-trimethylpentane	830 ppm
8001-35-2	Toxaphene	20 mg/m ³

· **PAC-3:**

540-84-1	2,2,4-trimethylpentane	5000* ppm
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(Contd. on page 4)

Safety Data Sheet acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Toxaphene Standard (1X1 mL)

8001-35-2 Toxaphene

(Contd. of page 3)

200 mg/m³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **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:

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

PEL	Long-term value: 2350 mg/m ³ , 500 ppm n-Octane only
TLV	Long-term value: 1401 mg/m ³ , 300 ppm

- **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.
Avoid contact with the skin.
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

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Reviewed on 03/22/2019

Trade name: Toxaphene Standard (1X1 mL)

(Contd. of page 4)

exceeding 4 hrs. Supplier recommendations should be followed.

· **Material of gloves**

For normal use: nitrile rubber, 11-13 mil thickness

For direct contact with the chemical: butyl rubber, 12-15 mil thickness

· **Penetration time of glove material**

For normal use: nitrile rubber: 1 hour

For direct contact with the chemical: butyl rubber: >4 hours

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Fluid

Color: Colorless

· **Odor:** Nearly odorless

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: -107 °C (-160.6 °F)

Boiling point/Boiling range: 99 °C (210.2 °F)

· **Flash point:** -12 °C (10.4 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 410 °C (770 °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: 1.1 Vol %

Upper: 6 Vol %

· **Vapor pressure at 20 °C (68 °F):** 41.25 hPa (30.9 mm Hg)

· **Density at 20 °C (68 °F):** 0.692 g/cm³ (5.77474 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.

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2019

Version Number 2

Reviewed on 03/22/2019

Trade name: Toxaphene Standard (1X1 mL)

(Contd. of page 5)

- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic:** Not determined.
 - Kinematic:** Not determined.
- **Solvent content:**
 - Organic solvents:** 100.0 %
 - VOC content:** 100.00 %
 - 1,000.0 g/l / 8.35 lb/gal
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

LD/LC50 values that are relevant for classification:
ATE (Acute Toxicity Estimate)

Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>33.5 mg/L (rat)

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

Oral	LD50	>5,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>33.52 mg/L (rat)

- **Primary irritant effect:**
 - on the skin:** Irritant to skin and mucous membranes.
 - on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

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

- **Carcinogenic categories**

IARC (International Agency for Research on Cancer)

8001-35-2	Toxaphene	2B
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(Contd. on page 7)

Safety Data Sheet acc. to OSHA HCS

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Reviewed on 03/22/2019

Trade name: Toxaphene Standard (1X1 mL)

(Contd. of page 6)

· NTP (National Toxicology Program)

8001-35-2 Toxaphene

R

· 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 minimus Quantities** -

· **UN-Number**

· **DOT, IMDG, IATA**

UN1993

· **UN proper shipping name**

· **DOT**

· **IMDG**

· **IATA**

Flammable liquids, n.o.s. (Octanes)

FLAMMABLE LIQUID, N.O.S. (OCTANES), MARINE
POLLUTANT

FLAMMABLE LIQUID, N.O.S. (OCTANES)

(Contd. on page 8)

US

Safety Data Sheet acc. to OSHA HCS

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Trade name: Toxaphene Standard (1X1 mL)

(Contd. of page 7)

· Transport hazard class(es)

· DOT, IATA



· Class

3 Flammable liquids

· Label

3

· IMDG



· Class

3 Flammable liquids

· Label

3

· Packing group

· DOT, IMDG, IATA

II

· Environmental hazards:

Product contains environmentally hazardous substances: 2,2,4-trimethylpentane

· Marine pollutant:

Symbol (fish and tree)

· Special precautions for user

Warning: Flammable liquids

· Danger code (Kemler):

33

· EMS Number:

F-E,S-E

· Stowage Category

B

· 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: 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. (OCTANES), 3, II, ENVIRONMENTALLY HAZARDOUS

US

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Version Number 2

Reviewed on 03/22/2019

Trade name: Toxaphene Standard (1X1 mL)

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15 Regulatory information

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

· Sara

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

8001-35-2	Toxaphene
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· **Section 313 (Specific toxic chemical listings):**

8001-35-2	Toxaphene
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· **TSCA (Toxic Substances Control Act):**

540-84-1	2,2,4-trimethylpentane
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· **Proposition 65**

· **Chemicals known to cause cancer:**

8001-35-2	Toxaphene
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· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.	
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· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.	
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· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.	
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· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

540-84-1	2,2,4-trimethylpentane	II
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8001-35-2	Toxaphene	B2
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· **TLV (Threshold Limit Value established by ACGIH)**

8001-35-2	Toxaphene	A3
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· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

8001-35-2	Toxaphene
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· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· **Department issuing SDS:** Document Control / Regulatory

· **Contact:** regulatory@ultrasci.com

· **Date of preparation / last revision** 03/31/2019 / 1

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

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Safety Data Sheet
acc. to OSHA HCS

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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
Flam. Liq. 2: Flammable liquids – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Asp. Tox. 1: Aspiration hazard – Category 1

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

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