

Safety data sheet according to UK REACH

Printing date 26.03.2025

Revision: 26.03.2025

1 Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** Pesticides Surrogate Standard (1X1 mL)
- **Part number:** ISM-300-1
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
Reagents and Standards for Analytical Chemical Laboratory Use
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Agilent Technologies LDA UK Ltd.
5500 Lakeside Cheadle Royal Business Park,
Cheadle, Cheshire, SK8 3GR
United Kingdom
Tel: +44 (0) 345 712 5292
- **Further information obtainable from:**
Telephone: 0800 603 1000
pdl-msds_author@agilent.com
- **1.4 Emergency telephone number:** CHEMTREC®: +44 20 3807 3798

2 Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



flame

Flam. Liq. 2	H225	Highly flammable liquid and vapour.
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health hazard

Repr. 2	H361fd	Suspected of damaging fertility. Suspected of damaging 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.



environment

Aquatic Chronic 2	H411	Toxic to aquatic life with long lasting effects.
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Skin Irrit. 2	H315	Causes skin irritation.
STOT SE 3	H336	May cause drowsiness or dizziness.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the GB CLP regulation.

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· Hazard pictograms



GHS02

GHS07

GHS08

GHS09

· Signal word Danger

· Hazard-determining components of labelling:

toluene

n-hexane

· Hazard statements

H225 Highly flammable liquid and vapour.

H315 Causes skin irritation.

H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

H336 May cause drowsiness or dizziness.

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

H304 May be fatal if swallowed and enters airways.

H411 Toxic to aquatic life with long lasting effects.

· Precautionary statements

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read carefully and follow all instructions.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P260 Do not breathe vapours.

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

P280 Wear protective gloves / protective clothing.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

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

P391 Collect spillage.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· 2.3 Other hazards

· Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

3 Composition/information on ingredients

· 3.2 Chemical characterisation: Mixtures

· Description: Mixture of substances listed below with nonhazardous additions.

· Dangerous components:

CAS: 108-88-3 EINECS: 203-625-9	toluene ⚠ Flam. Liq. 2, H225; ⚠ Repr. 2, H361d; STOT RE 2, H373; Asp. Tox. 1, H304; ⚠ Skin Irrit. 2, H315; STOT SE 3, H336	56.489%
CAS: 110-54-3 EINECS: 203-777-6	n-hexane ⚠ Flam. Liq. 2, H225; ⚠ Repr. 2, H361f; STOT RE 2, H373; Asp. Tox. 1, H304; ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; STOT SE 3, H336	42.9864%
CAS: 1770-80-5 EINECS: 217-192-9	dibutyl chlorendate ⚠ Aquatic Acute 1, H400	0.2623%

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· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

4 First aid measures

· 4.1 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.· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.· **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

5 Firefighting measures

· 5.1 Extinguishing media

· **Suitable extinguishing agents:**

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.· **For safety reasons unsuitable extinguishing agents:** Water with full jet

· 5.2 Special hazards arising from the substance or mixture

During heating or in case of fire poisonous gases are produced.

· 5.3 Advice for firefighters

· **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

· 6.2 Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

· 6.3 Methods and material for containment and cleaning up:

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

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

· 6.4 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.

7 Handling and storage

· 7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

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Open and handle receptacle with care.

Prevent formation of aerosols.

- **Information about fire - and explosion protection:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

- **7.2 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 container tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

- **7.3 Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **8.1 Control parameters**

- **Additional information about design of technical facilities:** No further data; see section 7.

- **Ingredients with limit values that require monitoring at the workplace:**

108-88-3 toluene	
WEL	Short-term value: 384 mg/m ³ , 100 ppm
	Long-term value: 191 mg/m ³ , 50 ppm
	Sk

110-54-3 n-hexane	
WEL	Long-term value: 72 mg/m ³ , 20 ppm

- **Additional information:** The lists valid during the making were used as basis.

- **8.2 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.

Do not inhale gases / fumes / aerosols.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

- **Respiratory protection:**

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 11-13mil thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15mil 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

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- **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

· 9.1 Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Fluid
Colour:	According to product specification
· Odour:	Characteristic
· Odour threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	69 °C

· Flash point: -22 °C

· Flammability (solid, gas): Highly flammable.

· Auto-ignition temperature: 240 °C

· Decomposition temperature: Not determined.

· Ignition temperature: Product is not selfigniting.

· Explosive properties: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· Explosion limits:

Lower:	1.2 Vol %
Upper:	7.4 Vol %

· Vapour pressure at 20 °C: 110 hPa

· Vapour pressure at 50 °C: 540 hPa

· Density: Not determined.

· Relative density: Not determined.

· Vapour density: Not determined.

· Evaporation rate: Not determined.

· Solubility in / Miscibility with water:

Not miscible or difficult to mix.

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

· Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

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· Solvent content:	
Organic solvents:	99.5 %
VOC (EC)	99.48 %
· Solids content:	
0.0 %	
· 9.2 Other information	
No further relevant information available.	

10 Stability and reactivity

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

11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

· LD/LC50 values relevant for classification:

108-88-3 toluene

Oral	LD50	5,580 mg/kg (rat)
Dermal	LD50	12,124 mg/kg (rabbit)
Inhalative	LC50/4 h	5,320 mg/L (mouse)
		28.1 mg/L (rat)

110-54-3 n-hexane

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

1770-80-5 dibutyl chlorendate

Oral	LD50	>10,100 mg/kg (rat)
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- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity**
Suspected of damaging fertility. Suspected of damaging the unborn child.
- **STOT-single exposure**
May cause drowsiness or dizziness.
- **STOT-repeated exposure**
May cause damage to organs through prolonged or repeated exposure.

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- **Aspiration hazard**
May be fatal if swallowed and enters airways.

12 Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Toxic for fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (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.
Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

13 Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **14.1 UN-Number**
- **Not Regulated, De minimus Quantities**
- **ADR, IMDG, IATA** - UN1993
- **14.2 UN proper shipping name**
- **ADR** 1993 FLAMMABLE LIQUID, N.O.S. (HEXANES, TOLUENE), ENVIRONMENTALLY HAZARDOUS
- **IMDG** FLAMMABLE LIQUID, N.O.S. (HEXANES, TOLUENE), MARINE POLLUTANT
- **IATA** FLAMMABLE LIQUID, N.O.S. (HEXANES, TOLUENE)

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· 14.3 Transport hazard class(es)

· ADR, IMDG



· Class 3 Flammable liquids.
 · Label 3

· IATA



· Class 3 Flammable liquids.
 · Label 3

· 14.4 Packing group

· ADR, IMDG, IATA II

· 14.5 Environmental hazards:

Product contains environmentally hazardous substances:
 dibutyl chlorendate, n-hexane

· Marine pollutant: Symbol (fish and tree)

· Special marking (ADR): Symbol (fish and tree)

· 14.6 Special precautions for user

Warning: Flammable liquids.

· Hazard identification number (Kemler code): 33

· EMS Number: F-E,S-E

· Stowage Category B

· 14.7 Transport in bulk according to Annex II of
 Marpol and the IBC Code

Not applicable.

· Transport/Additional information:

· ADR

· 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

· Transport category 2

· Tunnel restriction code D/E

· 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,
 TOLUENE), 3, II, ENVIRONMENTALLY HAZARDOUS

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15 Regulatory information

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

· Poisons Act

· Regulated explosives precursors

None of the ingredients is listed.

· Regulated poisons

None of the ingredients is listed.

· Reportable explosives precursors

None of the ingredients is listed.

· Reportable poisons

None of the ingredients is listed.

· Directive 2012/18/EU

· Named dangerous substances - ANNEX I None of the ingredients is listed.

· Seveso category

E2 Hazardous to the Aquatic Environment

P5c FLAMMABLE LIQUIDS

· Qualifying quantity (tonnes) for the application of lower-tier requirements 200 t

· Qualifying quantity (tonnes) for the application of upper-tier requirements 500 t

· 15.2 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.

· Relevant phrases

H225 Highly flammable liquid and vapour.

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H336 May cause drowsiness or dizziness.

H361d Suspected of damaging the unborn child.

H361f Suspected of damaging fertility.

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

H400 Very toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

· Department issuing SDS: Document Control / Regulatory

· Contact: pdl-acg-regulatory-cq@agilent.com

· Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

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)

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

ATE: Acute toxicity estimate values

Flam. Liq. 2: Flammable liquids – Category 2

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Skin Irrit. 2: Skin corrosion/irritation – Category 2
Repr. 2: Reproductive toxicity – Category 2
Repr. 2: Reproductive toxicity – 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
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

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

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