

## Safety Data Sheet

Australia

### Section 1. Identification

**Product name** Digitoxin; part of 'Demo and training kit small molecules'

**Catalogue Number** 22-0618-61



**Product type** Liquid.

#### Relevant identified uses of the substance or mixture and uses advised against

##### Identified uses

- ☒ Analytical chemistry.
- ☒ Use in laboratories
- ☒ Scientific research and development

#### Company details

##### **Manufacturer**

GE Healthcare UK Ltd  
Amersham Place  
Little Chalfont  
Buckinghamshire HP7 9NA  
England  
+44 0870 606 1921

##### **Supplier**

GE Healthcare Australia  
Level 11, 32 Phillip Street  
Parramatta NSW 2150  
Australia  
1800 150 522

**Emergency telephone number** 000 and +61 2 9846 4000

### Section 2. Hazard(s) identification

**Classification of the substance or mixture** ☒ FLAMMABLE LIQUIDS - Category 4

☒ Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 99.3%

#### GHS label elements

##### **Signal word**

☒ **WARNING**

##### **Hazard statements**

☒ **Combustible liquid.**

#### Precautionary statements

##### **Prevention**

☒ Wear protective gloves. Wear eye or face protection. Keep away from flames and hot surfaces. - No smoking.

##### **Response**

☒ Not applicable.

##### **Storage**

☒ Store in a well-ventilated place. Keep cool.

##### **Disposal**

☒ Dispose of contents and container in accordance with all local, regional, national and international regulations.

##### **Supplemental label elements**

☒ Not applicable.

**Other hazards which do not result in classification** ☒ None known.



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### Section 3. Composition and ingredient information

**Substance/mixture** ☒ Mixture

**Other means of identification** Not available.

#### CAS number/other identifiers

**CAS number** ☒ Not applicable.

**EC number** ☒ Mixture.

Ingredient name	% (w/w)	CAS number
<input checked="" type="checkbox"/> Dimethyl sulfoxide	99.3	67-68-5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

#### Description of necessary first aid measures

<b>Eye contact</b>	<input checked="" type="checkbox"/> Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
<b>Inhalation</b>	<input checked="" type="checkbox"/> Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
<b>Skin contact</b>	<input checked="" type="checkbox"/> Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
<b>Ingestion</b>	<input checked="" type="checkbox"/> Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

#### Most important symptoms/effects, acute and delayed

##### Potential acute health effects

<b>Eye contact</b>	<input checked="" type="checkbox"/> No known significant effects or critical hazards.
<b>Inhalation</b>	<input checked="" type="checkbox"/> No known significant effects or critical hazards.
<b>Skin contact</b>	<input checked="" type="checkbox"/> No known significant effects or critical hazards.
<b>Ingestion</b>	<input checked="" type="checkbox"/> No known significant effects or critical hazards.

##### Over-exposure signs/symptoms

<b>Eye contact</b>	<input checked="" type="checkbox"/> No specific data.
<b>Inhalation</b>	<input checked="" type="checkbox"/> No specific data.
<b>Skin contact</b>	<input checked="" type="checkbox"/> No specific data.
<b>Ingestion</b>	<input checked="" type="checkbox"/> No specific data.

#### Indication of immediate medical attention and special treatment needed, if necessary

<b>Notes to physician</b>	<input checked="" type="checkbox"/> Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	<input checked="" type="checkbox"/> No specific treatment.
<b>Protection of first-aiders</b>	<input checked="" type="checkbox"/> No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)



## Section 5. Firefighting measures

### Extinguishing media

**Suitable extinguishing media** Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

**Unsuitable extinguishing media** Do not use water jet.

**Specific hazards arising from the chemical** Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

**Hazardous thermal decomposition products** Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
sulfur oxides

**Special protective actions for fire-fighters** Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters** Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and material for containment and cleaning up

**Small spill** Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill** Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

**Protective measures** Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Advice on general occupational hygiene** Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities** Store between the following temperatures: 4 to 8°C (39.2 to 46.4°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.



## Section 8. Exposure controls and personal protection

### Control parameters

#### Occupational exposure limits

##### Ingredient name

Dimethyl sulfoxide

##### Exposure limits

**DFG MAC-values list (Germany, 7/2015). Absorbed through skin.**

PEAK: 320 mg/m<sup>3</sup>, 4 times per shift, 15 minutes.

TWA: 160 mg/m<sup>3</sup> 8 hours.

PEAK: 100 ppm, 4 times per shift, 15 minutes.

TWA: 50 ppm 8 hours.

#### Appropriate engineering controls

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

#### Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

#### Skin protection

##### Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

##### Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

##### Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

#### Respiratory protection

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

Physical state	Liquid.
Colour	Colourless.
Odour	Odourless.
Melting point	18.4°C (65.1°F)
Boiling point	189°C (372.2°F)
Flash point	Closed cup: 85°C (185°F)
Evaporation rate	0.026 (butyl acetate = 1)
Flammability (solid, gas)	Not available.
Lower and upper explosive (flammable) limits	Lower: 1.8% Upper: 63%
Vapour pressure	0.06 kPa (0.45 mm Hg) [room temperature]
Vapour density	2.71 [Air = 1]
Partition coefficient: n-octanol/water	Not available.
Decomposition temperature	Not available.
Flow time (ISO 2431)	Not available.

### Aerosol product



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**Flame duration** ☒ Not applicable.

## Section 10. Stability and reactivity

**Reactivity** ☒ No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability** ☒ The product is stable.

**Possibility of hazardous reactions** ☒ Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid** ☒ Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapour to accumulate in low or confined areas.

**Incompatible materials** ☒ Reactive or incompatible with the following materials:  
oxidizing materials

**Hazardous decomposition products** ☒ Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
<input checked="" type="checkbox"/> Dimethyl sulfoxide	LD50 Dermal	Rat	40000 mg/kg	-
	LD50 Oral	Rat	14500 mg/kg	-

#### Irritation/Corrosion

Not available.

#### Sensitisation

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

Not available.

**Information on likely routes of exposure** ☒ Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

**Eye contact** ☒ No known significant effects or critical hazards.

**Inhalation** ☒ No known significant effects or critical hazards.

**Skin contact** ☒ No known significant effects or critical hazards.

**Ingestion** ☒ No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** ☒ No specific data.

**Inhalation** ☒ No specific data.

**Skin contact** ☒ No specific data.

**Ingestion** ☒ No specific data.



**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Short term exposure**Potential immediate effects ☒ Not available.Potential delayed effects ☒ Not available.**Long term exposure**Potential immediate effects ☒ Not available.Potential delayed effects ☒ Not available.**Potential chronic health effects**

Not available.

General ☒ No known significant effects or critical hazards.Carcinogenicity ☒ No known significant effects or critical hazards.Mutagenicity ☒ No known significant effects or critical hazards.Teratogenicity ☒ No known significant effects or critical hazards.Developmental effects ☒ No known significant effects or critical hazards.Fertility effects ☒ No known significant effects or critical hazards.**Numerical measures of toxicity****Acute toxicity estimates**

Not available.

**Section 12. Ecological information****Toxicity**

Product/ingredient name	Result	Species	Exposure
<input checked="" type="checkbox"/> dimethyl sulfoxide	Acute LC50 25000 ppm Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 34000000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 100 µl/L Marine water	Algae - Ulva lactuca	72 hours
	Chronic NOEC 6 ppb Fresh water	Fish - Poecilia reticulata - Adult	16 weeks

**Persistence and degradability**

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
<input checked="" type="checkbox"/> dimethyl sulfoxide	-	3.1%; 14 day(s)	Not readily

**Bioaccumulative potential**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<input checked="" type="checkbox"/> dimethyl sulfoxide	-1.35	3.16	low

**Mobility in soil**Soil/water partition coefficient (K<sub>oc</sub>) ☒ Not available.Other adverse effects ☒ No known significant effects or critical hazards.**Section 13. Disposal considerations**

<b>Disposal methods</b>	<input checked="" type="checkbox"/> The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.
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## Section 14. Transport information

	ADG	ADR/RID	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
Proper shipping name	-	-	-	-
Class	-	-	-	-
Label				
PG	-	-	-	-
Environmental hazards	<input checked="" type="checkbox"/> No.	<input checked="" type="checkbox"/> No.	<input checked="" type="checkbox"/> No.	<input checked="" type="checkbox"/> No.
Additional information	-	-	-	-

**Special precautions for user** ☒ **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of Marpol and the IBC Code** Not available.

## Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

☒ Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

International regulationsChemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	<input checked="" type="checkbox"/> Not determined.
Europe	<input checked="" type="checkbox"/> All components are listed or exempted.
United States	<input checked="" type="checkbox"/> All components are listed or exempted.
Canada inventory	<input checked="" type="checkbox"/> At least one component is not listed in DSL but all such components are listed in NDSL.
China	<input checked="" type="checkbox"/> Not determined.
Japan	<input checked="" type="checkbox"/> <b>Japan inventory (ENCS):</b> Not determined. <b>Japan inventory (ISHL):</b> Not determined.
Malaysia	<input checked="" type="checkbox"/> Not determined.
New Zealand	<input checked="" type="checkbox"/> All components are listed or exempted.





## Section 16. Any other relevant information

### History

Date of printing	08 January 2018	Date of previous issue	05 October 2009
Date of issue	08 January 2018	Version	4
msdslifesciences@ge.com			

### Procedure used to derive the classification

Classification	Justification
 FLAMMABLE LIQUIDS - Category 4	On basis of test data
 Indicates information that has changed from previously issued version.	

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

