


SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2015/830 - United Kingdom (UK)

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

1.1 Product identifier

Product name	DMSO; part of 'Demo and training kit small molecules'	
Catalogue Number	22-0618-61	
EC number	200-664-3	
CAS number	67-68-5	
Product description	Not available.	
Product type	Liquid.	
Other means of identification	Methane, 1,1'-sulfinylbis-; Methane, sulfinylbis-; Dimethyl sulphoxide; Methyl sulfoxide; Methylsulfinylmethane; Sulfinyl bis(methane); Methyl sulphoxide; DMSO; METHANE,SULFINYLBIS-DIMETHYL SULFOXIDE; Sulfinylbismethane; SULFOXIDE, DIMETHYL	
Chemical formula	C ₂ H ₆ OS	

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

Identified uses

Analytical chemistry.
Liquid chromatography.
Scientific research and development

1.3 Details of the supplier of the safety data sheet

Supplier	GE Healthcare UK Ltd Amersham Place Little Chalfont Buckinghamshire HP7 9NA England +44 0870 606 1921	Hours of operation 08.30 - 17.00
Person who prepared the MSDS: msdslifesciences@ge.com		

1.4 Emergency telephone number

United Kingdom (UK)	GE Healthcare UK Ltd Amersham Place Little Chalfont Buckinghamshire HP7 9NA	0870 606 1921
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National advisory body/Poison Centre

United Kingdom (UK)	Health professionals should contact the National Poisons Information Service (NPIS) by telephone, or use TOXBASE www.toxbase.org . NPIS http://www.npis.org/ advise that others seeking specific information on poisons should contact: In England and Wales: NHS Direct - 0845 4647 or 111 In Scotland: NHS 24 - 08454 24 24 24 In N Ireland: Contact your local GP or pharmacist during normal hours; click here (www.gpoutofhours.hscni.net/) for GP services Out-of-Hours.
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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition ☒ Mono-constituent substance**Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**☒ Not classified.☒ The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms

Signal word ☒ No signal word.Hazard statements ☒ No known significant effects or critical hazards.**Precautionary statements**Prevention ☒ Not applicable.Response ☒ Not applicable.Storage ☒ Not applicable.Disposal ☒ Not applicable.

Supplemental label elements Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings Not applicable.

Tactile warning of danger Not applicable.

2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII ☒ No.
☒ P: Not available. B: No. T: Yes.Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII ☒ No.
☒ P: Not available. vB: No.Other hazards which do not result in classification ☒ None known.

SECTION 3: Composition/information on ingredients

3.1 Substances ☒ Mono-constituent substance

Product/ingredient name	Identifiers	%	<u>Classification</u>	Type
			Regulation (EC) No. 1272/2008 [CLP]	
<input checked="" type="checkbox"/> Dimethyl sulfoxide	EC: 200-664-3 CAS: 67-68-5	100	Not classified.	[A]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type☒ [A] Constituent☐ [B] Impurity☐ [C] Stabilising additive

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



SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	Wash out mouth with water. 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. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

Eye contact	No specific data.
Inhalation	No specific data.
Skin contact	No specific data.
Ingestion	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	No specific treatment.

See toxicological information (Section 11)

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides

5.3 Advice for firefighters

Special precautions 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.
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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 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. 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".

6.2 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).

6.3 Methods and material for containment and cleaning up

Small spill	Stop leak if without risk. Move containers from spill area. 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.
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Large spill	Stop leak if without risk. Move containers from spill area. 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. Dispose of via a licensed waste disposal contractor.
6.4 Reference to other sections	See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures	Put on appropriate personal protective equipment (see Section 8).
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.

7.2 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 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. 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.

7.3 Specific end use(s)

Recommendations	Analytical chemistry. Laboratory chemicals. Scientific research and development.
Industrial sector specific solutions	Not available.

SECTION 8: Exposure controls/personal protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DELs available.

PNECs

No PECs available.

8.2 Exposure controls

Appropriate engineering controls	Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
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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.
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.
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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	✓ Liquid. [Hygroscopic.]
Colour	Colourless.
Odour	Odourless.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	✓ 18.4°C
Initial boiling point and boiling range	✓ 89°C
Flash point	✓ Closed cup: 85°C Open cup: 95°C
Evaporation rate	0.026 (butyl acetate = 1)
Flammability (solid, gas)	✓ Not available.
Upper/lower flammability or explosive limits	Lower: 1.8% Upper: 63%
Vapour pressure	✓ 0.06 kPa [room temperature]
Vapour density	2.71 [Air = 1]
Relative density	✓ 1.1
Solubility(ies)	Easily soluble in the following materials: cold water, hot water, diethyl ether and acetone.
Partition coefficient: n-octanol/water	-2.03
Auto-ignition temperature	✓ 215°C
Decomposition temperature	✓ Not available.
Viscosity	✓ Dynamic (room temperature): 1.1 mPa·s
Explosive properties	Not considered to be a product presenting a risk of explosion.
Oxidising properties	Not available.

9.2 Other information

Burning time	✓ Not applicable.
Burning rate	✓ Not applicable.
Solubility in water	✓ 1000 g/l
Molecular weight	✓ 78.14 g/mole
Aerosol product	
Heat of combustion	✓ 25330140 J/kg



SECTION 10: Stability and reactivity

- 10.1 Reactivity** ☒ No specific test data related to reactivity available for this product or its ingredients.
- 10.2 Chemical stability** The product is stable.
- 10.3 Possibility of hazardous reactions** ☒ Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 Conditions to avoid** ☒ No specific data.
- 10.5 Incompatible materials** ☒ No specific data.
- 10.6 Hazardous decomposition products** Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

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

Conclusion/Summary Not available.

Irritation/Corrosion

Conclusion/Summary Not available.

Sensitisation

Conclusion/Summary Not available.

Mutagenicity

Conclusion/Summary Not available.

Carcinogenicity

Conclusion/Summary Not available.

Reproductive toxicity

Conclusion/Summary Not available.

Teratogenicity

Conclusion/Summary 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

Inhalation ☒ No known significant effects or critical hazards.

Ingestion ☒ No known significant effects or critical hazards.

Skin contact ☒ No known significant effects or critical hazards.

Eye contact ☒ No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation No specific data.

Ingestion No specific data.

Skin contact ☒ No specific data.

Eye contact ☒ No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposureShort 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.

Conclusion/Summary 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.

Other information ☒ Not available.

SECTION 12: Ecological information

12.1 Toxicity

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

Conclusion/Summary Not available.

12.2 Persistence and degradability

Conclusion/Summary Not available.

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

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
<input checked="" type="checkbox"/> Dimethyl sulfoxide	-2.03	3.16	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) ☒ Not available.

Mobility Not available.

12.5 Results of PBT and vPvB assessment

PBT ☒ No.

☒ P: Not available. B: No. T: Yes.

vPvB ☒ No.

☒ P: Not available. vB: No.

12.6 Other adverse effects No known significant effects or critical hazards.



SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal

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.

Hazardous waste

Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Packaging

Methods of disposal

The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions

This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-		-	-
14.3 Transport hazard class(es)	-		-	-
14.4 Packing group	-		-	-
14.5 Environmental hazards	No.	No.	No.	No.
Additional information	-		-	-

14.6 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.

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

Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Not applicable.

Other EU regulations



Industrial emissions (integrated pollution prevention and control) ☒ Listed
- Air

Industrial emissions (integrated pollution prevention and control) ☒ Not listed
- Water

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Seveso Directive

☒ This product is not controlled under the Seveso Directive.

International regulations

Chemical 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

Europe ☒ This material is listed or exempted.
United States ☒ This material is listed or exempted.
Canada inventory ☒ This material is listed or exempted.
China ☒ This material is listed or exempted.
Japan ☒ **Japan inventory (ENCS):** This material is listed or exempted.
Japan inventory (ISHL): Not determined.

15.2 Chemical safety assessment

☒ Not available.

SECTION 16: Other information

☒ Indicates information that has changed from previously issued version.

Abbreviations and acronyms

ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 (CLP/GHS)

Classification	Justification
<input checked="" type="checkbox"/> Not classified.	

Full text of abbreviated H statements ☒ Not applicable.

Full text of classifications [CLP/GHS] ☒ Not applicable.

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Notice to reader



Article Number

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Page: 9/10

Validation date 8 January 2018

Version 4

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.



Article Number

22061861-7



Page: 10/10

Validation date 8 January 2018

Version 4