SDS solution (10%)

Safety data sheet

Prepared in accordance with Regulation (EC) No. 1907/2006 (REACH)

Version 1.0 | Created: 1 June 2015 | Revised: Not applicable

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

Product name and description	Sodium dodecyl sulphate/sulfate solution (10%)
Trade name/Brand	Not applicable
Synonym(s)	SDS solution; Sodium lauryl sulphate/sulfate solution
REACH Number	Not applicable, mixture
CAS Number	Not applicable, mixture
EC Number	Not applicable, mixture
Recommended use	This product is a laboratory preparation for educational use only. The SDS solution should be used for protein gel electrophoresis as described in the *Protein power!* Teacher's guide provided by the NCBE. [3 mL of the 10% SDS solution should be added to 300 mL of diluted TB (Tris-Borate) buffer concentrate, to provide a 'running buffer' for the gel electrophoresis.] **Please refer to Section 16 for additional safety guidelines.**
Uses advised against	None
Supplier of the product and of this safety data sheet	National Centre for Biotechnology Education (NCBE) University of Reading 2 Earley Gate Whiteknights READING RG6 6AU United Kingdom T: 0118 9873743 F: 0118 9750140 E: NCBE@reading.ac.uk W: www.ncbe.reading.ac.uk
Manufacturer of the product	Severn Biotech Limited Unit 2 Park Lane KIDDERMINSTER DY11 6TJ
Emergency telephone number	0118 9873743 (NCBE, University of Reading. 08.30–17.00 weekdays only)

SECTION 2. Hazards identification

Classification according to Regulation (EC) No. 1272/2008 [CLP]

H302	Harmful if swallowed.
H315	Causes skin irritation (Category 2).
H319	Causes serious eye irritation (Category 2B).
H412	Harmful to aquatic life with long-lasting effects.

Label elements

WARNING

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H412	Harmful to aquatic life with long-lasting effects.
P305+P351 +P338+P315	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P302+P352	IF ON SKIN: Wash with plenty of soap and water
P308+P313	IF exposed or concerned: Call a POISON CENTRE or doctor/ physician.

Other hazards None found.

Notes

1. *Along with the majority of suppliers we have classified this SDS solution as a serious eye irritant, even though a concentration of ≥10% SDS (w/w) would normally be required to attract such a warning. Although the concentration of SDS in the solution lies just below the potentially hazardous level, it would be wise to wear eye protection such as safety glasses when handling this concentrate.*
2. *Some statements above are omitted from the product label, as the volume of the mixture is less than 125 mL.*

SECTION 3. Composition/Information on the ingredients

Name of component (Synonyms) [CLP index number]	Weight (%)	EC (EINECS) number	CAS number	REACH registration number	Classification under Regulation (EC) No 1272/2008 [CLP]*
Water	~90.5	231-791-2	7732-18-5	–	–
SDS (Sodium dodecyl sulphate; Sodium lauryl sulfate)	~9.5	205-788-1	151-21-3	–	Flam. Sol .1 (H228) Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Acute Tox. 4 (H332) STOT SE 3 (H335) Aquatic Chronic 3 (H412)

** Note that these classifications refer to the pure (100%) substances, such as solid SDS, not necessarily to the mixture supplied.*

For the full text of the safety classifications (H-statements), refer to Section 16.

SECTION 4. First aid measures

General information Although SDS, a surfactant, is used in many household cleaning and hygiene products, the solution supplied is possibly more concentrated than one might encounter in the home. The principal hazards from this concentrate are skin and eye contact.

Inhalation Move the casualty to fresh air. If respiratory problems occur, consult a doctor.

Skin contact	Remove contaminated clothing, which can then be washed as normal. Wash SDS solution off the skin immediately with plenty of water. Seek medical attention if irritation occurs.
Eye contact	Check for and remove contact lenses if present. Rinse opened eye immediately with running water, also wash under the eyelids, for several minutes. Seek medical advice if irritation persists.
Ingestion	Rinse out mouth with water, then drink plenty of water. Do not induce vomiting.
Self-protection of the first aider	Rinse your hands with water after handling anything that has been contaminated with the SDS solution.
Most important symptoms and effects, both acute and delayed	Serious irritation to the eyes (burning sensation, redness and impairment of vision — similar to getting soap in the eye). Irritation to the skin.
Indication of any immediate medical attention and special treatment	First Aid as outlined above, decontamination of clothing *etc*, treatment by a medical professional if symptoms persist.
Advice to doctor	Treat symptomatically.

SECTION 5. Fire fighting measures

Suitable extinguishing media	Use water spray, dry chemical or carbon dioxide.
Extinguishing media which must not be used for safety reasons	No information available.
Special hazards arising from the substance or mixture	No information available.
Advice for fire fighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6. Accidental release measures

The volumes of SDS solution that are likely to be used in a school are small enough that any spill can be cleaned up easily and safely. The principal dangers are skin and eye contact, as described in Section 4 above.

Personal precautions, protective equipment and emergency procedures	Ensure adequate ventilation. Wear personal protective equipment, such as a lab coat, gloves and eye protection.
Environmental precautions	If spilt, the SDS solution should be washed away (diluted) with plenty of water.
Methods and materials for containment and cleaning up	Soak up the spill with inert absorbent material (*e.g.*, paper towels). Place the waste in a suitable, closed container (*e.g.*, a plastic bag) for disposal. Wash away any residue with plenty of water.
Reference to other sections	See Section 7 for information on safe handling. See Section 13 for disposal information.

SECTION 7. Handling and storage

Precautions for safe handling	Ensure adequate ventilation and avoid the formation of aerosols. Wear personal protective equipment, such as a lab coat, gloves and eye protection. Do not get into eyes, on skin or clothing. Do not breathe in vapours or dust from dried-up solution. Do not ingest.
Conditions for safe storage	Keep the SDS solution in a tightly-closed container. Store in a dry, cool and well-ventilated place. Do not refrigerate, as the SDS will precipitate out of solution.

SECTION 8. Exposure controls/personal protection

Control parameters

Exposure limits	Not applicable.
Biological limit values	No information available.
Derived no effect level	No information available.
Predicated no effect level	No information available.

Exposure controls
Handle in accordance with good laboratory hygiene and safety practice. Wash hands before breaks and after handling the mixture. Wear gloves and eye protection.

SECTION 9. Physical and chemical properties

Appearance	Clear, colourless.
Physical state	Liquid.
Odour	Odourless.
Odour threshold	Does not apply, as the mixture is odourless.
pH	8.7 @ 20 °C.
Melting point / Range	No data available.
Boiling point / Range	> 100 °C @ 760 mm Hg.
Flash point	Not applicable; does not flash.
Evaporation rate	No data available.
Flammability (solid, gas)	Not applicable as the mixture is a liquid.
Explosion limits	No data available.
Vapour pressure	23 hPa @ 20 °C.
Vapour density	No data available.
Density @ 20 °C	~0.9 g / mL
Relative density	Not applicable as the mixture is a liquid.
Solubility in water	Readily soluble.
Solubility in other solvents	SDS is partly soluble in ethanol.
Partition coefficient: n-octanol/water	No data available.
Autoignition temperature	No data available.
Decomposition temperature	No data available.
Viscosity	No data available.
Explosive properties	No data available.
Oxidising properties	No data available.

Other information
No additional information relevant to the safe use of the substance.
Molecular formula of SDS: $C_{12}H_{25}NaO_4S$
Molecular mass of SDS: 288.38

SECTION 10. Stability and reactivity

Reactivity	No information available.
Chemical stability	When stored at room temperature, the product is stable.
Possibility of hazardous reactions	No known hazardous reactions.
Conditions to avoid	Do not refrigerate as the SDS will precipitate out of solution.
Incompatible materials	No information available.
Hazardous decomposition products	No hazardous decomposition products.

SECTION 11. Toxicological information

Acute toxicity	Sodium dodecyl sulphate. Oral toxicity (LD50, rat) 1.288 g per kg. Sodium dodecyl sulphate. Inhalation (LC50, rat) >3.9 g per m^3. Sodium dodecyl sulphate. Irritation of skin (rabbit) 50 mg/24 hours.
Irritation	Irritant to skin and mucous membranes. Irritating to the eyes.
Corrosivity	No information available.
Sensitisation	No sensitising effects known.
Repeated dose toxicity	No information available.
Carcinogenicity	No information available.
Mutagenicity	No information available.
Toxicity for reproduction	No information available.

SECTION 12. Ecological information

Toxicity	Contains a substance (SDS) which is toxic to aquatic organisms.
Persistence and degradability	Soluble in water. Persistence is unlikely.
Bioaccumulative potential	Bioaccumulation is unlikely. log Pow 1.6.
Mobility in soil	Likely to be highly mobile due to its solubility in water.
Results of PBT and vPVB assessment	No information available.
Other adverse effects	None known.

SECTION 13. Disposal considerations

Waste from residues/unused product	Wash down a foul water drain with water. Wipe up any spills of the solution with absorbent material (*e.g.*, paper towels) and water. Dispose of the paper towels in the normal waste.
Contaminated packaging	Rinse with water and dispose of in normal waste according to local regulations. Recycle (the bottles are HDPE) where appropriate facilities are available.

SECTION 14. Transport information

UN number	Not applicable.
UN proper shipping name	Not applicable.
Transport hazard class	Not applicable.
Packaging group	Not applicable.
Environmental hazards	Not applicable.

SECTION 15. Regulatory information

International inventories

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	AICS	KECL
Water	231-791-2	–		●	●	–	●	–	●	●	●
Sodium dodecyl sulphate	205-788-1	–		●	●	–	●	●	●	●	●

● = listed

National regulations

Sodium dodecyl sulphate is catagorised as WGK 2 under the German Water Classification regulations (VwVwS).
A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted.

SECTION 16. Other information

Full text of GHS hazard statements

H228 Flammable solid.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long-lasting effects.

Please refer to the Teacher's guide that accompanies the NCBE *Protein power!* kit you are using the SDS solution with. This can be downloaded from the NCBE's Web site: **www.ncbe.reading.ac.uk**

This Safety Data Sheet should be read in conjunction with that for TB buffer concentrate, which is diluted, then mixed with the SDS solution before use. If the SDS was diluted in a similar volume of water, it would present no significant safety hazard (it would contain ~0.1% SDS — a lower concentration of SDS than is found in products like hair shampoos, which may contain 5–10% SDS).

TB buffer is hazardous in its own right, however, so the mixture of SDS and diluted TB buffer should be handled as though it were dilute TB buffer alone. The principal hazards of the diluted buffer and SDS would be to the eyes, and therefore a risk assessment may suggest that suitable eye protection should be worn.

The information given in this Safety Data Sheet is based on the present state of our knowledge.

This Safety Data Sheet has been compiled and is solely intended for this product.

END OF SAFETY DATA SHEET