

## DNA extraction buffer

# Safety data sheet

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

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

<b>Product name and description</b>	DNA extraction buffer
<b>Trade name/Brand</b>	Not applicable
<b>Synonym(s)</b>	None
<b>REACH Number</b>	Not applicable, mixture
<b>CAS Number</b>	Not applicable, mixture
<b>EC Number</b>	Not applicable, mixture
<b>Recommended use</b>	This product is intended for use as described in the NCBE DNA pendant kit.
<b>Uses advised against</b>	None
<b>Supplier of the product and of this safety data sheet</b>	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
<b>Manufacturer of the product</b>	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
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## SECTION 2. Hazards identification

<b>Classification according to Regulation (EC) No. 1272/2008 [CLP]</b>	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. A concentration of  $\geq 10\%$  SDS (w/w) is required to attract an eye irritant warning. The concentration of SDS in this mixture is only 1%. Note that shampoos and similar products may contain 5–10% SDS.
2. The concentration of sodium chloride in the mixture is just over 1%; legally this triggers an eye irritant warning, but note that seawater contains approximately 3% sodium chloride and physiological saline is 0.9% (w/v) sodium chloride.
3. 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	~97	231-791-2	7732-18-5	–	Not classified
Sodium chloride	1.23	231-598-3	7647-14-5	–	Eye Irrit. 2 (H319)
SDS (Sodium dodecyl sulphate; Sodium lauryl sulfate)	1.00	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)
TRIS (Trometamol; tris(hydroxymethyl)aminomethane; 2-Amino-2-hydroxymethyl-propane-1,3-diol)	0.79	201-064-4	77-86-1	–	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335)

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

The mixture also contains a blue food dye for ease of handling.

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

## SECTION 4. First aid measures

<b>General information</b>	This mixture is essentially salty detergent solution. The detergent is SDS, which is used in many household cleaning and hygiene products. The solution supplied is less concentrated than one might encounter in the home. The principal hazards from this mixture are skin and eye contact.
<b>Inhalation</b>	Move the casualty to fresh air. If respiratory problems occur, consult a doctor.
<b>Skin contact</b>	Remove contaminated clothing, which can then be washed as normal. Wash the liquid off the skin immediately with plenty of water. Seek medical attention if irritation occurs.
<b>Eye contact</b>	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.
<b>Ingestion</b>	Rinse out mouth with water, then drink plenty of water. Do not induce vomiting.
<b>Self-protection of the first aider</b>	Rinse your hands with water after handling anything that has been contaminated with the solution.
<b>Most important symptoms and effects, both acute and delayed</b>	Irritation to the eyes (burning sensation, redness and impairment of vision — similar to getting soap in the eye). Irritation to the skin.
<b>Indication of any immediate medical attention and special treatment</b>	First Aid as outlined above, decontamination of clothing <i>etc</i> , treatment by a medical professional if symptoms persist.
<b>Advice to doctor</b>	Treat symptomatically.

## SECTION 5. Fire fighting measures

<b>Suitable extinguishing media</b>	Use water spray, dry chemical or carbon dioxide.
<b>Extinguishing media which must not be used for safety reasons</b>	No information available.
<b>Special hazards arising from the substance or mixture</b>	No information available.
<b>Advice for fire fighters</b>	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 solution that are likely to be used 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.

<b>Personal precautions, protective equipment and emergency procedures</b>	Ensure adequate ventilation. If large volumes have been spilt, wear personal protective equipment, such as a lab coat, gloves and eye protection.
<b>Environmental precautions</b>	If spilt, the solution should be washed away (diluted) with plenty of water.

<b>Methods and materials for containment and cleaning up</b>	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.
<b>Reference to other sections</b>	See Section 7 for information on safe handling. See Section 13 for disposal information.

## SECTION 7. Handling and storage

<b>Precautions for safe handling</b>	In the unlikely event of a large spill, 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.
<b>Conditions for safe storage</b>	Keep the solution in a tightly-closed container. Store in a dry, cool and well-ventilated place. Do not refrigerate, as the SDS may precipitate out of solution.

## SECTION 8. Exposure controls/personal protection

### Control parameters

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

### Exposure controls

Handle in accordance with good laboratory hygiene and safety practice. Wash hands before breaks and after handling the mixture.

## SECTION 9. Physical and chemical properties

<b>Appearance</b>	Clear, light blue liquid.
<b>Physical state</b>	Liquid.
<b>Odour</b>	Odourless.
<b>Odour threshold</b>	Does not apply, as the mixture is odourless.
<b>pH</b>	6.4 @ 20 °C.
<b>Melting point / Range</b>	No data available.
<b>Boiling point / Range</b>	> 100 °C @ 760 mm Hg.
<b>Flash point</b>	Not applicable; does not flash.
<b>Evaporation rate</b>	No data available.
<b>Flammability (solid, gas)</b>	Not applicable as the mixture is a liquid.
<b>Explosion limits</b>	No data available.
<b>Vapour pressure</b>	23 hPa @ 20 °C.
<b>Vapour density</b>	No data available.
<b>Density @ 20 °C</b>	~1.00 g / mL
<b>Relative density</b>	Not applicable as the mixture is a liquid.
<b>Solubility in water</b>	Readily soluble.
<b>Solubility in other solvents</b>	SDS is partly soluble in ethanol.
<b>Partition coefficient: n-octanol/water</b>	No data available.
<b>Autoignition temperature</b>	No data available.
<b>Decomposition temperature</b>	No data available.
<b>Viscosity</b>	No data available.
<b>Explosive properties</b>	No data available.
<b>Oxidising properties</b>	No data available.

## Other information

No additional information relevant to the safe use of the substance.

## SECTION 10. Stability and reactivity

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

## SECTION 11. Toxicological information

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

## SECTION 12. Ecological information

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

## SECTION 13. Disposal considerations

<b>Waste from residues/unused product</b>	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.
<b>Contaminated packaging</b>	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

<b>UN number</b>	Not applicable.
<b>UN proper shipping name</b>	Not applicable.
<b>Transport hazard class</b>	Not applicable.
<b>Packaging group</b>	Not applicable.
<b>Environmental hazards</b>	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 categorised 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 *DNA pendant* kit you are using the DNA extraction buffer with. This can be downloaded from the NCBE's Web site: [www.ncbe.reading.ac.uk](http://www.ncbe.reading.ac.uk)

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**