

SAFETY DATA SHEET

New Zealand

Section 1. Identification

Product name

**Lysis Solution; part of 'DNAscan BioChipSet™
Cassette'**

Catalogue Number

NB-BCS-0002



Other means of identification

Not available.

Product type

Liquid.

Identified uses

Use in laboratories

Supplier

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

GE Healthcare Bio-Sciences
8 Tangihua Street
Auckland 1010

Person who prepared the MSDS :

msdslifesciences@ge.com

Emergency telephone number (with hours of operation)

0800 733 893
(10am - 7pm)

Section 2. Hazards identification

HSNO Classification

6.1 - ACUTE TOXICITY: ORAL - Category D
6.1 - ACUTE TOXICITY: SKIN - Category C
8.2 - CORROSIVE TO DERMAL TISSUE - Category C
8.3 - CORROSIVE TO OCULAR TISSUE - Category A
9.3 - TERRESTRIAL VERTEBRATE ECOTOXICITY - Category C

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 2.6%

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 2.6%

This material is classified as hazardous according to criteria in the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001 and has been classified according to the Hazardous Substances (Classifications) Regulations 2001.

GHS label elements

Signal word

Danger

Hazard statements

Toxic in contact with skin.
Harmful if swallowed.
Causes severe skin burns and eye damage.
Harmful to terrestrial vertebrates.

Precautionary statements

Prevention

Wear protective gloves. Wear eye or face protection. Wear protective clothing. Avoid release to the environment. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Response

Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash with plenty of soap and water. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

Storage

Store locked up.

Disposal

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



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Symbol

Other hazards which do not result in classification None known.

Section 3. Composition/information on ingredients

Substance/mixture	Mixture
Other means of identification	Not available.
<u>CAS number/other identifiers</u>	
CAS number	Not applicable.
EC number	Mixture.
Product code	NB-BCS-0002

Ingredient name	%	CAS number
guanidinium chloride	20 - 60	50-01-1
2-amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	0.1 - 5	1185-53-1
disodium dihydrogen ethylenediaminetetraacetate	0.5 - 2	139-33-3

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

Inhalation	Get medical attention immediately. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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. 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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Ingestion	Get medical attention immediately. 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. Chemical burns must be treated promptly by a physician. 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.
Skin contact	Get medical attention immediately. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Eye contact	Get medical attention immediately. 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. Chemical burns must be treated promptly by a physician.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Inhalation	May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion	Harmful if swallowed. May cause burns to mouth, throat and stomach.
Skin contact	Causes severe burns. Toxic in contact with skin.
Eye contact	Causes serious eye damage.

Over-exposure signs/symptoms

Inhalation	No specific data.
Ingestion	Adverse symptoms may include the following: stomach pains
Skin	Adverse symptoms may include the following: pain or irritation redness blistering may occur



Eyes	Adverse symptoms may include the following: pain watering redness
<u>Indication of immediate medical attention and special treatment needed, if necessary</u>	
Specific treatments	Not available.
Notes to physician	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable	Use an extinguishing agent suitable for the surrounding fire.
Not suitable	None known.
Specific hazards arising from the chemical	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides
Hazchem code	Not available.
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.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	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. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
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 materials 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.
Large spill	Stop leak if without risk. Move containers from spill area. 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	Put on appropriate personal protective equipment (see Section 8). 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. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Conditions for safe storage, including any incompatibilities	Store between the following temperatures: 5 to 25°C (41 to 77°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.



Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

Appropriate engineering controls If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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.

Respiratory protection Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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.

Eye 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: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin 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.

Section 9. Physical and chemical properties

Appearance

Physical state	Liquid.
Colour	Clear.
Odour	Odourless.
Odour threshold	Not available.
pH	7 to 8
Melting point	Not available.
Boiling point	Not available.
Flash point	Not applicable.
Burning rate	Not applicable.
Burning time	Not applicable.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Lower and upper explosive (flammable) limits	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Solubility	Easily soluble in the following materials: cold water and hot water.
Solubility in water	Not available.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
SADT	Not available.



Viscosity Not available.

Aerosol product

Type of aerosol Not applicable.
Heat of combustion Not available.
Ignition distance Not applicable.
Enclosed space ignition - Time equivalent Not applicable.
Enclosed space ignition - Deflagration density Not applicable.
Flame height Not applicable.
Flame duration Not applicable.

Section 10. Stability and reactivity

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 No specific data.
Incompatible materials No specific data.
Hazardous decomposition products Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on the likely routes of exposure

Inhalation May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion Harmful if swallowed. May cause burns to mouth, throat and stomach.
Skin contact Causes severe burns. Toxic in contact with skin.
Eye contact Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation No specific data.
Ingestion Adverse symptoms may include the following:
 stomach pains
Skin contact Adverse symptoms may include the following:
 pain or irritation
 redness
 blistering may occur
Eye contact Adverse symptoms may include the following:
 pain
 watering
 redness

Delayed and immediate effects and also chronic effects from short and long term exposure

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
guanidinium chloride	LD50 Oral	Rat	475 mg/kg	-
disodium dihydrogen ethylenediaminetetraacetate	LD50 Oral	Rat	2000 mg/kg	-

Irritation/Corrosion

Not available.

Sensitisation

Not available.

Potential chronic health effects

General No known significant effects or critical hazards.
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.
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.

Chronic toxicity

Not available.

Carcinogenicity

Not available.

Mutagenicity

Not available.

Teratogenicity

Not available.

Reproductive toxicity

Not available.

Specific target organ toxicity

Not available.

Aspiration hazard

Not available.

Numerical measures of toxicity**Acute toxicity estimates**

Route	ATE value
Oral	1180.5 mg/kg
Dermal	750 mg/kg

Section 12. Ecological information

Ecotoxicity	No known significant effects or critical hazards.
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Aquatic and terrestrial toxicity

Product/ingredient name	Result	Species	Exposure
disodium dihydrogen ethylenediaminetetraacetate	Acute LC50 320 mg/l	Fish	96 hours

Persistence/degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
guanidinium chloride	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
guanidinium chloride	-1.7	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc})	Not available.
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Other adverse effects	No known significant effects or critical hazards.
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Section 13. Disposal considerations

Disposal methods

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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*
New Zealand Class	Not regulated.	-	-	-
ADG Class	Not regulated.	-	-	-
UN Class	Not regulated.	-	-	-
ADR/RID Class	Not regulated.	-	-	-
IATA Class	Not regulated.	-	-	-
IMDG Class	Not regulated.	-	-	-

PG* : Packing group

Section 15. Regulatory information

New Zealand Inventory of Chemicals (NZIoC)	All components are listed or exempted.
HSNO Approval Number	HSR002596
HSNO Group Standard	Laboratory Chemicals and Reagent Kits
HSNO Classification	6.1 - ACUTE TOXICITY: ORAL - Category D 6.1 - ACUTE TOXICITY: SKIN - Category C 8.2 - CORROSIVE TO DERMAL TISSUE - Category C 8.3 - CORROSIVE TO OCULAR TISSUE - Category A 9.3 - TERRESTRIAL VERTEBRATE ECOTOXICITY - Category C
Australia inventory (AICS)	All components are listed or exempted.
Safety, health and environmental regulations specific for the product	No known specific national and/or regional regulations applicable to this product (including its ingredients).

Section 16. Other information


History

Date of printing	25 November 2013
Date of issue/ Date of revision	25 November 2013
Date of previous issue	5/27/2013.
Version	2

Key to abbreviations	ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail UN = United Nations
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References	Not available.
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 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.



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