SAFETY DATA SHEET

New Zealand

Section 1. Identification

Product name **DNA Extraction Kit BACC3**

Catalogue Number RPN8512

Other means of identification Not available.

Product type Liquid.

Identified uses

Analytical chemistry.
Laboratory chemicals
Scientific research and development

Supplier

Cytiva
Amersham Place
Little Chalfont
Buckinghamshire
HP7 9NA United Kingdom
+44 1494 508000

Cytiva New Zealand
Buddle Findlay, Level 18, Pricewaterhousecooper Tower,
188 Quay Street,
Auckland, Auckland, 1010
New Zealand

Person who prepared the SDS :

sds_author@cytiva.com

Emergency telephone number (with hours of operation)

0800 733 893
(10am - 7pm)

Section 2. Hazards identification

HSNO Classification

5.1.1 - OXIDIZING SUBSTANCES - Category B
6.1 - ACUTE TOXICITY: ORAL - Category E
6.3 - SKIN IRRITATION - Category B
6.4 - EYE IRRITATION - Category A (Irritant)
6.8 - REPRODUCTIVE AND DEVELOPMENTAL TOXICITY - Category C
6.9 - SPECIFIC TARGET ORGAN TOXICITY (SINGLE OR REPEATED EXPOSURE): ORAL - Category A

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 37.5%

This material is classified as hazardous according to criteria in the Hazardous Substances (Hazard Classification) Notice 2020.

GHS label elements

Signal word Danger

Hazard statements

May intensify fire; oxidiser.
May be harmful if swallowed.
Causes mild skin irritation.
Causes serious eye irritation.
May cause harm to breast-fed children.
Causes damage to organs if swallowed.

Precautionary statements

Prevention Obtain special instructions before use. Wear protective gloves. Wear eye or face protection. Keep away from heat. Take any precaution to avoid mixing with combustibles and other incompatible materials. Do not breathe vapour. Avoid contact during pregnancy/while nursing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Wash hands after handling. IF exposed or concerned: Call a POISON CENTER or doctor/physician. Get medical advice/attention.

Storage Store locked up. Store away from combustibles.

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

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.

Ingredient name	% (w/w)	Identifiers
Perchloric acid, sodium salt	50 - 75	CAS: 7601-89-0 EC: 231-511-9

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 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 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.

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. 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 Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention if adverse health effects persist or are severe. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Eye contact 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Inhalation No known significant effects or critical hazards.

Ingestion May be harmful if swallowed. Causes damage to organs following a single exposure if swallowed. Irritating to mouth, throat and stomach.

Skin contact Causes mild skin irritation.

Eye contact Causes serious eye irritation.

Over-exposure signs/symptoms

Inhalation Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

Ingestion Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

Skin Adverse symptoms may include the following:
irritation
redness
reduced foetal weight
increase in foetal deaths
skeletal malformations

Eyes Adverse symptoms may include the following:
pain or irritation
watering
redness

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

Specific treatments	Not available.
Notes to physician	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Protection of first-aiders	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	Use an extinguishing agent suitable for the surrounding fire.
Not suitable	None known.
Specific hazards arising from the chemical	Oxidising material. May intensify fire. 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: 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. 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	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 (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 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. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Use spark-proof tools and explosion-proof equipment. 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). Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Use spark-proof tools and explosion-proof equipment. 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). 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. Avoid exposure while nursing. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. 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. Keep away from combustible materials. 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 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. Separate from reducing agents and combustible 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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

Biological exposure indices

No exposure indices known.

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.
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: chemical splash goggles.

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	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.
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.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	Liquid.
Colour	Colourless.
Odour	Odourless.
Odour threshold	Not available.
pH	8 [Conc. (% w/w): 100%]
Melting point/freezing point	Not available.
Boiling point or initial boiling point and boiling range	Not available.
Flash point	Not applicable.
Burning time	Not applicable.
Burning rate	Not applicable.
Evaporation rate	Not available.
Flammability	Not available.
Lower and upper explosive (flammable) limits	Not available.
Vapour pressure	Not available.

Vapour Pressure at 20˚C	**Vapour pressure at 50˚C**

Ingredient name	mm Hg	kPa	Method	mm Hg	kPa	Method
water	17.5	2.3				

Relative vapour density Not available.

Relative density Not available.

Solubility(ies)

Media	Result
cold water	Easily soluble
hot water	Easily soluble

Solubility in water Not available.

Partition coefficient: n-octanol/ water Not applicable.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

SADT Not available.

Viscosity Not available.

Flow time (ISO 2431) Not available.

Particle characteristics

Median particle size 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 Hazardous reactions or instability may occur under certain conditions of storage or use.
Conditions may include the following:
contact with combustible materials
Reactions may include the following:
risk of causing or intensifying fire

Conditions to avoid Drying on clothing or other combustible materials may cause fire.

Incompatible materials Reactive or incompatible with the following materials:
combustible materials
reducing materials

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

Section 11. Toxicological information

Information on likely routes of exposure

Inhalation No known significant effects or critical hazards.

Ingestion May be harmful if swallowed. Causes damage to organs following a single exposure if swallowed.
Irritating to mouth, throat and stomach.

Skin contact Causes mild skin irritation.

Eye contact Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

Ingestion Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

Skin contact Adverse symptoms may include the following:
irritation
redness
reduced foetal weight
increase in foetal deaths
skeletal malformations

Eye contact Adverse symptoms may include the following:
pain or irritation
watering
redness

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

Acute toxicity

Product/ingredient name **Result**

Perchloric acid, sodium salt	**Rat - Oral - LD50** 2100 mg/kg Toxic effects: Behavioral - Excitement Lung, Thorax, or Respiration - Dyspnea Changes in Chemistry or Temperature - Body temperature decrease

Conclusion/Summary[Product] Not available.

Skin corrosion/irritation

Not available.

Conclusion/Summary[Product] Not available.

Serious eye damage/eye irritation

Not available.

Conclusion/Summary[Product] Not available.

Respiratory corrosion/irritation

Not available.

Conclusion/Summary[Product] Not available.

Respiratory or skin sensitization

Not available.

Skin

Conclusion/Summary[Product] Not available.

Respiratory

Conclusion/Summary[Product] 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.
Developmental effects	May cause harm to breast-fed children.
Fertility effects	No known significant effects or critical hazards.

Chronic toxicity

Not available.

Conclusion/Summary[Product] Not available.

Carcinogenicity

Not available.

Conclusion/Summary[Product] Not available.

Germ cell mutagenicity

Not available.

Conclusion/Summary[Product] Not available.

Reproductive toxicity

Not available.

Conclusion/Summary[Product] Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Result
Perchloric acid, sodium salt	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1

Aspiration hazard

Not available.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Perchloric acid, sodium salt	2100	N/A	N/A	N/A	N/A

Other information Adverse symptoms include the following: methaemoglobinaemia

Section 12. Ecological information

Ecotoxicity No known significant effects or critical hazards.

Aquatic and terrestrial toxicity

Product/ingredient name	Result
Perchloric acid, sodium salt	**Chronic - NOEC - Fresh water** Fish - Eastern mosquitofish - *Gambusia holbrooki* - Adult 7.31 mg/l [8 weeks] Effect: Reproduction **Chronic - EC10 - Fresh water** OECD Daphnia - Water flea - *Daphnia magna* - Neonate Age: <24 hours 104.23 mg/l [21 days] Effect: Reproduction **Acute - LC50 - Fresh water** US EPA, ASTM Crustaceans - Water flea - *Ceriodaphnia dubia* - Neonate Age: <8 hours 64.77235 mg/l [48 hours] Effect: Mortality **Acute - LC50 - Fresh water** US EPA, ASTM Fish - Fathead minnow - *Pimephales promelas* - Larvae Age: <24 hours 397 mg/l [96 hours] Effect: Mortality

Conclusion/Summary[Product] Not available.

Persistence/degradability

Not available.

Conclusion/Summary[Product] Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
sodium perchlorate	-	0.06 to 0.14	Low

Mobility in soil

Soil/water partition coefficient Not available.

Other adverse effects No known significant effects or critical hazards.

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	UN3211	Oxidising liquid, n.o.s. (5M Sodium perchlorate solution) (sodium perchlorate)	5.1	II
		-		
		No.		
IATA Class	UN3211	PERCHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S. (5M Sodium perchlorate solution) (sodium perchlorate)	5.1	II
		-		
		No.		
IMDG Class	UN3211	PERCHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S. (5M Sodium perchlorate solution) (sodium perchlorate)	5.1	II
		-		
		No.		

PG* : Packing group

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 IMO instruments Not available.

Section 15. Regulatory information

HSNO Approval Number HSR002596

HSNO Group Standard Laboratory Chemicals and Reagent Kits

HSNO Classification 5.1.1 - OXIDIZING SUBSTANCES - Category B
6.1 - ACUTE TOXICITY: ORAL - Category E
6.3 - SKIN IRRITATION - Category B
6.4 - EYE IRRITATION - Category A (Irritant)
6.8 - REPRODUCTIVE AND DEVELOPMENTAL TOXICITY - Category C
6.9 - SPECIFIC TARGET ORGAN TOXICITY (SINGLE OR REPEATED EXPOSURE): ORAL - Category A

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

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

New Zealand	All components are listed or exempted.
Australia	All components are listed or exempted.
United States	All components are active or exempted.
Canada inventory	All components are listed or exempted.
China	All components are listed or exempted.
Japan	**Japan inventory (CSCL)**: All components are listed or exempted. **Japan inventory (ISHL)**: Not determined.

Section 16. Other information

History

Date of printing	20 February 2026
Date of issue/ Date of revision	20 February 2026
Date of previous issue	7/23/2025
Version	10.02
Key to abbreviations	ADG = Australian Dangerous Goods 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 = 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
References	Not available.

Indicates information that has changed from previously issued version.

Notice to reader

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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.