

MATERIAL SAFETY DATA SHEET

Nucleic Acids

(DNA, RNA and cDNA)

Material Safety Data Sheet for:

Nucleic acids, DNA, RNA and cDNA, derived from cell cultures supplied UK Health Security Agency (UKHSA)

Review date: 2nd November 2023

Issued to: Users of UKHSA Nucleic acids, DNA, RNA and cDNA, derived from cell cultures

Access: Document to be downloaded from Culture Collections website
<https://www.culturecollections.org.uk>

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MATERIAL SAFETY DATA SHEET FOR UKHSA NUCLEIC ACIDS

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

Product name:

This MSDS applies to nucleic acids, including genomic DNA, RNA and cDNA, derived from human and animal cell cultures.

Refer to the relevant cell line data entry on the Culture Collections website:

<https://www.culturecollections.org.uk>

Contact: Culture Collections
UK Health Security Agency
Porton Down Salisbury
SP4 0JG, UK
Telephone (working hours): +44 (0)1980 612512
Telephone (out of hours): +44 (0)1980 612100
<https://www.culturecollections.org.uk/contactus>

2. Hazards Identification

Chemical Hazards:

Tris-EDTA (TE) in high concentrations is an irritant.

Biological Hazards:

Nucleic acids derived from human and animal cell cultures supplied by the Culture Collections are not known to contain any agents capable of harm to healthy adult humans.

Health Effects:

Eyes: Not known; Skin: Not known; Ingestion: Not known; Inhalation: Not known

Physical Hazards:

It is recommended that persons handling nucleic acids should wear a laboratory coat, protective glasses and latex/nitrile or plastic protective gloves.

In the case that the nucleic acid is shipped on dry ice, it is recommended that the user handles the samples using appropriate personal protective equipment (PPE)

such as insulated gloves and a laboratory coat. In its solid-state dry ice can cause serious freeze damage without PPE so contact with skin should be avoided.

Any dry ice should be allowed to evaporate in a well-ventilated area. Do not dispose of dry ice in a sealed container.

This sheet does not constitute an assessment as required by the Control of Substances Hazardous to Health Regulations 1994.

The information contained in this publication is given in good faith and is accurate to the best of our knowledge.

Environmental hazards: Not applicable

3. Composition/information on ingredients

The nucleic acid is dissolved in a solution containing 10mM Tris and 1mM EDTA.

4. First aid measures

If accidental contact with material occurs laboratory staff must follow the local first aid procedures that are normally applied following exposure to organisms of ACDP Hazard Group 2.

Eyes: Irrigate with physiological saline or water. Seek medical advice immediately.

Skin: Wash thoroughly with soap and water. Seek medical advice immediately.

Ingestion: Seek medical advice immediately.

Inhalation: Seek medical advice immediately.

5. Fire-fighting measures

Extinguisher medium: Not applicable

Unsuitable Extinguisher medium: Not applicable

Protective equipment for firefighting: Not applicable

6. Accidental release measures

Personal precautions: avoid direct contact with the material. Do not open the primary containers unless authorised to do so. Wear a laboratory coat, disposable latex/plastic gloves and safety glasses.

Environmental precautions: if spillage occurs place absorbent material over the spillage and disinfect, see below.

Spillage: wear a laboratory coat, safety glasses and disposable latex/plastic gloves. Place paper towels or other absorbent material over the spillage. Pour disinfectant over spillage to saturate and leave for 30 minutes prior to cleaning and disposal. The preferred disinfectant is 10% v/v sodium hypochlorite (10,000 parts per million available chlorine). This should not be used in combination with other disinfectants. See your local risk assessment or contact the manufacturer of the disinfectant for additional information.

7. Handling and storage

In the case that the nucleic acid is shipped on dry ice, it is recommended that the user handle the samples using appropriate personal protective equipment such as insulated gloves and laboratory coat. In its solid-state dry ice will quickly cause serious freeze damage, so contact with skin should be avoided.

Any dry ice should be allowed to evaporate in a well-ventilated area. Do not dispose of dry ice in a sealed container.

Personal protective equipment comprised of laboratory coat, disposable latex/plastic gloves and safety glasses should be worn when handling (unpacking) nucleic acids.

Detailed discussions of laboratory safety procedures are provided in: "Laboratory Safety: Principles and Practice" (Fleming, et al, 1995); the Journal of Tissue Culture Methods (Caputo, 1988), and in the U.S. Government Publication, "Biosafety in Microbiological and Biomedical Laboratories (BMBL) 5th Edition" (CDC, 2009). This publication is available for download from the Center for Disease Control, Office of Health and Safety's website <http://www.cdc.gov/biosafety/publications/bmbl5/>.

8. Exposure controls / personal protection

Engineering control measures: Tubes or plates containing nucleic acids should be opened in a Class II microbiological safety cabinet under conditions of Containment (Biohazard) Level 2. Personal protective equipment comprised of laboratory coat, disposable gloves and safety glasses should be worn.

Respiratory protection: Avoid aerosol production and inhalation. Handle as for ACDP2.

Hand Protection: Wear latex gloves at all times.

Eye protection: Wear safety glasses at all times.

9. Physical and chemical properties

Appearance: (1) Clear fluid in a 2ml plastic tube. (2) Clear fluid in a plastic 96 well plate.

Solid/liquid/gas: Solid when frozen, liquid when thawed.

This product is supplied either frozen on dry ice or thawed on cold ice packs. The DNA is dissolved in an aqueous, inorganic buffer containing 10mM Tris-HCL and 1mM EDTA (known as TE buffer). The RNA is dissolved in water. cDNA is supplied in a buffer containing residual dNTP's, deactivated reverse transcriptase, and a reverse transcriptase buffer.

10. Stability and reactivity

Reactivity data. Stable under normal conditions of use. Do not mix with strong acids, strong alkalis or strong oxidizing reagents.

11. Toxicological information

Routes of exposure: Not applicable

Acute effects: Not applicable

Chronic effects: Not applicable

Special considerations: In its liquid state this substance is not normally toxic but avoid aerosol formation and inhalation. The DNA is dissolved in a weak Tris-EDTA solution which is an irritant.

12. Ecological information

Persistence / degradability: Not applicable

Bioaccumulation: Not applicable

Ecotoxicity: Not applicable

13. Disposal considerations

Spillage: Wear a laboratory coat, safety glasses and disposable gloves. Place paper towels or other absorbent material over the spillage. Pour disinfectant over spillage to saturate and leave for 30 minutes prior to cleaning and disposal. The most appropriate disinfectant is 10% v/v Sodium hypochlorite (10,000 parts per million available chlorine). This should not be used in combination with other disinfectants. See your local risk assessment or contact the manufacturer of the disinfectant for additional information.

Waste disposal: Decontaminate prior to disposal with a 10% solution of sodium hypochlorite and dispose of decontaminated liquid waste down a designated sink with running water. Solid waste should be placed in a sealed bag and labelled and destroyed by incineration.

Follow all national, regional and local regulations. The UK Environmental Protection Act 1990 applies.

14. Transport information

Additional information arising from the Carriage of Dangerous Goods by Road & Air (Classification, Packaging and Labelling) Regulations:

UN no.1845- applicable to dry ice if nucleic acid is transported frozen

UN 1845: Dry Ice. Dry ice is not subject to ADR (road regulations) except for 5.5.3. It is only classified as a dangerous goods under IATA regulations (air)

The nucleic acids are not classified as dangerous goods and because they are non-infectious to humans or animals they are not subject to IATA or ADR regulation for dangerous goods.

15. Regulatory information

Classification and Labelling According to EU Directives

Not hazardous according to Directive 67/548/EEC

Caution: Substance not yet fully tested (EU)

Danger symbol: Not applicable

Contains: Not applicable

R-phrases: R:22, R:36/37/38

S-phrases: S:9, S:23, S:26, S:36 – applies to dry ice if nucleic acid is transported frozen

Observe the normal safety regulations when handling this material.

16. Other information

In the event of an accident involving exposure of staff to the material contained in the samples, contact the Culture Collections (+44 (0)1980 612512) during normal UK working hours. Refer to section 1 for full contact details.

The above information is correct to the best of our knowledge. All materials and mixtures may present unknown hazards and should be used with caution.

The user should make independent assessments and decisions regarding the completeness of the information based on all sources available.

The Culture Collections shall not be held liable for any damage resulting from handling or contact with the above product.