MATERIAL SAFETY DATA SHEET

Frozen Cell Cultures

Material Safety Data Sheet for:
Public Health England (PHE) frozen cell cultures

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Issued to:	Users of PHE frozen cell cultures
Access:	Document to be downloaded from PHE Culture Collections website at www.phe-culturecollections.org.uk

Culture Collections
Public Health England
Porton Down
Salisbury
SP4 0JG
UK
Tel: +44 (0) 1980 612512
Fax: +44 (0) 1980 611315
Email: culturecollections@phe.gov.uk
Website: www.phe-culturecollections.org.uk

MATERIAL SAFETY DATA SHEET FOR PHE FROZEN CELL CULTURES

Advisory Committee on Dangerous Pathogens (ACDP) Levels 1 or 2

This Material Safety Data Sheet (MSDS) has been written in accordance with the European Union Council Directive 98/24/EC of 7th April on the protection of the health and safety of workers from the risks related to chemical agents at work (fourteenth individual directive within the meaning of Article 16(1) of the Directive 89/391/EEC). Commission Directive 2001/58/EC of 27th July 2001 amending for the second time Directive 91/155/EEC defining and laying down the detailed arrangements for the system of information relating to dangerous preparations in implementation of Article 14 of the European Parliament Directive 1999/45/EC and relating to dangerous substances in Implementation of Article 27 of Council Directive 67/548/EEC (safety data sheets). (Text with EEA relevance). Appropriate risk and safety phrases are cited in this MSDS.

1. Identification of the product and the establishment

Product name: Various human and animal cell cultures supplied by the European Collection of Authenticated Cell Cultures (ECACC) which is part of the Culture Collections of Public Health England. This includes a collection of Induced pluripotent stem cells (iPSCs) which have been produced using genetic modification. Please consult your local health and safety guidelines to ensure you are able to safely handle these products.

Refer to the relevant cell line data entry on the Culture Collections website at www.phe-culturecollections.org.uk

Contact:
Culture Collections
Public Health England
Porton Down
Salisbury
SP4 0JG
UK
Telephone: +44 (0)1980 612512; working hours
Telephone: +44 (0)1980 612100; out of hours or
On-call Mobile: +44 (0)7796 946660
Fax: + 44 (0)1980 611315

2. Physical and chemical properties and information on ingredients

Appearance: Frozen fluid in small glass or plastic containers (vials). The majority of cell cultures are supplied in plastic vials.

Solid/liquid/gas: Solid (frozen state).

The product is provided as a frozen culture of animal cells.

Appearance: yellow or pink solid for frozen cultures. Aqueous pH 6-8.

The frozen components may include but are not limited to: water, inorganic salts, vitamins, amino acids, carbohydrates, lipids, proteins (animal-derived) and cryoprotectant (dimethyl sulphoxide 10% v/v; or glycerol 10-20% v/v), phenol red.

3. Hazards identification

Chemical Hazards:

Frozen cultures may contain 5 to 10% (v/v) dimethyl sulphoxide (DMSO). DMSO may be harmful and toxic if in contact with skin or ingested, (R23/24/25). It also maybe irritating to eyes and respiratory system (R36/37/38). Thawed contents of vials should not come into contact with skin, eyes or digestive and respiratory epithelium (S24/25) and should be diluted upon use with culture media. Persons handling vials of frozen cells containing DMSO should wear a laboratory overall, protective glasses and insulated gloves (S36/37).

Biological hazards:
Although a human or animal cell line may not be known to contain any agents capable of harm to healthy adult humans the possibility of a contaminant, adventitious virus can rarely be excluded. Therefore it is recommended that all human and animal cell lines are handled as an ACDP Hazard Group 2 organism unless a higher ACDP Hazard Group is specified. The relevant cell line data entry on the Culture Collections website includes any specific instructions that may be applicable to the biohazard potential of this cell line and that should be considered by the user when performing a risk assessment. Any such information will be consistent with Containment Level 2. The user is referred to the relevant references in the relevant cell line data entry on the Culture Collections website at www.phe-culturecollections.org.uk. These cell lines have not been screened for adventitious agents.

Health Effects:

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

Physical Hazards:
Where cell lines are shipped as frozen vials there is a small risk that the vial may be pressurised, due to the expansion of trapped liquid nitrogen and could explode on warming. Such a risk will be increased if the vial has been shipped to the customer in a liquid nitrogen container (dry-shipper).

It is recommended that persons handling vials of frozen cells should wear a laboratory overall, protective glasses and protective laboratory gloves.

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.

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: Use medium suitable for surrounding environment

Unsuitable Extinguisher medium: N/A

Protective equipment for fire fighting: N/A

6. Accidental release measures

Personal precautions: avoid direct contact with the thawed material. Do not open the primary containers unless authorised to do so. Wear a laboratory overall, protective laboratory gloves and safety glasses.

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

Spillage of thawed material: wear a laboratory coat, safety glasses and protective laboratory 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

Personal protective equipment comprised of laboratory coat, protective laboratory gloves and safety glasses should be worn when handling (unpacking) human and animal cell lines. The dry ice (solid carbon dioxide) used to ship frozen vials should be allowed to evaporate in a well-ventilated area. Do not dispose of dry ice in a sealed container.

Vials or flasks containing human and animal cells should be opened in a Class II microbiological safety cabinet under conditions of ACDP Hazard Group 2.

Induced pluripotent stem cells have been produced using genetic modification please consult your local health and safety guidelines to ensure you are able to safely handle this product.

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 on 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: Vials containing human and animal cells should be opened in a Class II microbiological safety cabinet under conditions of ACDP Hazard Group 2. Personal protective equipment comprised of laboratory coat, protective laboratory gloves and safety glasses should be worn.

Respiratory protection: avoid aerosol production and inhalation. Handle as for ACDP Hazard Group 2.

Hand Protection: wear protective laboratory gloves at all times.

Eye protection: wear safety glasses at all times.

9. Stability and reactivity

Reactivity data: Stable. Hazardous polymerization will not occur.

10. Toxicological information

Routes of exposure: Not applicable

Acute effects: Not applicable

Chronic effects: Not applicable

Special considerations: In its thawed liquid state this material is not normally toxic but avoid aerosol formation and inhalation. Vials contain dimethyl sulphoxide 10% v/v which is an irritant that readily penetrates the skin.

11. Ecological information

Mobility: consult the relevant cell line data entry on Culture Collections website at www.phe-culturecollections.org.uk. (May apply in certain cases of genetic modification)

Persistence / degradability N/A

Bioaccumulation: N/A

Ecotoxicity: N/A

12. Disposal considerations

Follow established procedures for Containment (Biosafety) Level 2.

Methods for disposal for thawed content

Spillage: wear a laboratory coat, safety glasses and protective laboratory 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% sodium hypochlorite solution 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.

13. Transport information

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

UN no: 1845- Dry Ice. Dry ice not deemed dangerous by road transport only air.

Packing group; 3 – lowest grade of packaging.

Where a dry-shipper is used containing liquid nitrogen fully absorbed in a porous material IATA (International Air Transport Association) Dangerous Goods Regulations do not apply.

Most ECACC cell lines are not classified as dangerous goods as they are considered non-infectious to humans or animals and are not genetically modified; therefore they are not subject to IATA or European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) regulation for dangerous goods.

When the following categories apply ECACC will ensure the outer packaging indicates the appropriate packaging requirements:

Biological Substance Category B UN3373 – packed in compliance with IATA packing instruction 650.

Genetically Modified Organisms (GMOs) UN3245 – packed in compliance with IATA packing instruction 959.

14. Regulatory information

ECACC confirms that all necessary licences (import, holding, transfer and export) required for the consignment of this material are in place. The recipient is only required to provide evidence of permits and licences to receive and handle ACDP Hazard Group 3 restricted materials. For the relevant licences consult the Culture Collections website www.phe-culturecollections.org.uk.

This organism/material may be covered by United Kingdom or International legislation.

15. Other information

In the event of an accident involving exposure of a person 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.