



SAFETY DATA SHEET

New Zealand

Section 1. Identification

Product name

Klenow; part of 'CytoSure™ HT Genomic DNA Labelling Kit'

Catalogue Number

500040



Other means of identification

Not available.

Product type

Liquid.

Identified uses

Use in laboratories

Supplier

Cytiva
Amersham Place
Little Chalfont
Buckinghamshire
HP7 9NA United Kingdom
+44 0800 515 313

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

Person who prepared the MSDS :

sds_author@cytiva.com

Emergency telephone number (with hours of operation)

0800 733 893
(10am - 7pm)

Section 2. Hazards identification

HSNO Classification

Not classified.

Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 50%
Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 50%
Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 50%

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

No signal word.

Hazard statements

Harmful to aquatic life.

Precautionary statements

Prevention

Avoid release to the environment.

Response

Not applicable.

Storage

Not applicable.

Disposal

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

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 | 500040 |

| Ingredient name | % | CAS number |
|------------------------|----------|-------------------|
| glycerol | 50 | 56-81-5 |

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 adverse health effects persist or are severe. 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 | 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. Get medical attention if adverse health effects persist or are severe. 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. Get medical attention if symptoms occur. 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 if irritation occurs. |

Most important symptoms/effects, acute and delayed

Potential acute health effects

| | |
|---------------------|---|
| 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. |

Over-exposure signs/symptoms

| | |
|-------------------|-------------------|
| Inhalation | No specific data. |
| Ingestion | No specific data. |
| Skin | No specific data. |
| Eyes | No specific data. |

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 | In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. |
| Hazardous thermal decomposition products | Decomposition products may include the following materials: carbon dioxide carbon monoxide |
| 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. 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). Water polluting material. May be harmful to the environment if released in large quantities. |

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. 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 ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. 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 | Do not store above the following temperature: -20°C (-4°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

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|---|---|
| Ingredient name glycerol | Exposure limits NZ OSH (New Zealand, 12/2011). WES-TWA: 10 mg/m³ 8 hours. Form: Mist and Inspirable dust containing no asbestos and less than 1% free silica |
| Appropriate engineering controls | No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure 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. |
| <u>Individual protection measures</u> | |
| 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: safety glasses with side-shields. |
| 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

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|---|--|
| Physical state | Liquid. |
| Colour | Colourless. |
| Odour | Odourless. |
| Odour threshold | Not available. |
| pH | 7 [Conc. (% w/w): 100%] |
| Melting point | Not available. |
| Boiling point | Not available. |
| Flash point | [Product does not sustain combustion.] |
| Burning rate | Not applicable. |
| Burning time | Not applicable. |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Non-flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat, shocks and mechanical impacts, oxidizing materials, reducing materials, combustible materials, organic materials, metals, acids, alkalis and moisture. |
| 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. |
| Flow time (ISO 2431) | 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

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|---|--|
| 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 likely routes of exposure

| | |
|---------------------|---|
| 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. |

Symptoms related to the physical, chemical and toxicological characteristics

| | |
|---------------------|-------------------|
| Inhalation | No specific data. |
| Ingestion | No specific data. |
| Skin contact | No specific data. |
| Eye contact | No specific data. |

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

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|--------------------------------|---------------|----------------|-------------|-----------------|
| glycerol | LD50 Oral | Rat | 12600 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**

Not available.

Section 12. Ecological information**Ecotoxicity** This material is harmful to aquatic life.**Aquatic and terrestrial toxicity**

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|--------------------------------------|----------------------------|----------|
| glycerol | Acute LC50 54 to 57 ml/L Fresh water | Fish - Oncorhynchus mykiss | 96 hours |

Persistence/degradability

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-------------------------|-------------------|-----------------|------------------|
| glycerol | - | >60%; 28 day(s) | Readily |

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|-------------------------|--------------------|-----|-----------|
| glycerol | -1.76 | - | low |

Mobility in soil**Soil/water partition coefficient (K_{oc})** 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 | Not regulated. | - | - | - |
| | | No. | | |
| IATA Class | Not regulated. | - | - | - |
| | | - | | |
| | | No. | | |
| IMDG Class | Not regulated. | - | - | - |
| | | 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 Annex II of Marpol and the IBC Code Not available.

Section 15. Regulatory information

HSNO Approval Number HSR002596
HSNO Group Standard Laboratory Chemicals and Reagent Kits
HSNO Classification Not classified.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

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. |
| Europe | All components are listed or exempted. |
| United States | All components are listed or exempted. |
| Canada inventory | All components are listed or exempted. |
| China | All components are listed or exempted. |
| Japan | Not determined. |
| Malaysia | Not determined. |

Section 16. Other information

History

Date of printing 30 April 2020
Date of issue/ Date of revision 30 September 2019
Date of previous issue 2/15/2017
Version 2

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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