MATERIAL SAFETY DATA SHEET According to EC Directive 91/155 EC Date: 01/08/10

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

1.1 Product Details

Trade Names: PCRBIO Taq DNA Polymerase

Catalogue Numbers: PB10.11-05
PB10.11-20
PB10.11-40

Kit Components: PCRBIO Taq DNA Polymerase (5u/ul)
5x Reaction buffer

1.2 Company Details

Manufacturer/Supplier:

PCR Biosystems Ltd.
1st Floor
Aztec House
397-405 Archway Road
London, N6 4ER
United Kingdom

Telephone: +44 (0) 203 930 8101
Email: info@pcrbio.com

Further information obtainable from:

Technical Services
Details as above

1.3 Emergency Details

24-hour contact in case of emergency:
2. Hazards identification

- **Trade name** PCRBIO Taq DNA Polymerase (5u/ul)
- **Classification of the substance or mixture**
  - Classification according to Regulation (EC) No 1272/2008 The product is not classified according to the CLP regulation.
  - Classification according to Directive 67/548/EEC or Directive 1999/45/EC Void
  - Information concerning particular hazards for human and environment: The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system:**
  - The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.
- **Label elements**
- **Labelling according to EU guidelines:** Observe the general safety regulations when handling chemicals
  - The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (GefStoffV).
- **Safety phrases:**
  - 35 This material and its container must be disposed of in a safe way.
  - **Other hazards**
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.

3. Composition/information on ingredients

- **Chemical characterization:** Mixtures
  - **Description:** Mixture of the substances listed below with nonhazardous additions.
  - **Dangerous components:**
    - Glycerol
      - CAS: 56-81-5
      - EINECS: 200-289-5

- **Additional information** For the wording of the listed risk phrases refer to section 16.

4. First aid measures

- **Description of first aid measures**
  - **General information** No special measures required.
  - After inhalation Supply fresh air; consult doctor in case of complaints.
  - After skin contact Generally the product does not irritate the skin.
  - After eye contact Rinse opened eye for several minutes under running water.
· **After swallowing** Induce vomiting and call for medical help.
· **Information for doctor**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5. **Firefighting measures**

· **Extinguishing media**
· **Suitable extinguishing agents**
  CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.

6. **Accidental release measures**

· **Personal precautions, protective equipment and emergency procedures** Not required.
· **Environmental precautions:**
  Dilute with plenty of water.
  Do not allow to enter sewers/surface or ground water.
· **Methods and material for containment and cleaning up:**
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
· **Reference to other sections**
  No dangerous substances are released.
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7. **Handling and storage**

· **Handling**
· **Precautions for safe handling** No special measures required.
· **Information about protection against explosions and fires:** No special measures required.
· **Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and receptacles:** According to product specification
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** None.
· **Specific end use(s)** No further relevant information available.

8. **Exposure controls/personal protection**

· **Additional information about design of technical systems:** No further data; see item 7.
· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
  56-81-5 glycerol
  WEL () Long-term value: 10 mg/m³
- Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- Personal protective equipment

**General protective and hygienic measures**
The usual precautionary measures should be adhered to when handling chemicals.
- Breathing equipment: Not required.
- Protection of hands: Protective gloves.
- Material of gloves Synthentic gloves
- Penetration time of glove material
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- Eye protection: Safety glasses

### 9. Physical and chemical properties

- Information on basic physical and chemical properties
- General Information
- Appearance:
  - Form: Fluid
  - Colour: Colourless
  - Odour: Odourless
  - Odour threshold: Not determined.
  - pH-value: Not determined.
- Change in condition
- Melting point/Melting range: undetermined
- Boiling point/Boiling range: 100°C
  - Flash point: > 55°C
  - Flammability (solid, gaseous) Not applicable.
  - Ignition temperature: 270°C
  - Decomposition temperature: Not determined.
  - Self igniting: Product is not selfigniting.
  - Danger of explosion: Product does not present an explosion hazard.
- Explosion limits:
  - Lower: 1.8 Vol %
  - Upper: 63.0 Vol %
- Vapour pressure at 20°C: 23 hPa
  - Density: Not determined
  - Relative density Not determined.
  - Vapour density Not determined.
  - Evaporation rate Not determined.
- Solubility in / Miscibility with
  - Water: Fully miscible
  - Segregation coefficient (n-octanol/water): Not determined.
  - Viscosity:
    - dynamic: Not determined.
    - kinematic: Not determined.
  - Solvent content:
    - Organic solvents: 12.0 %
    - Water: 71.3 %
  - Solids content: 16.7 %
  - Other information No further relevant information available.
10. Stability and reactivity

- Reactivity
- Chemical stability
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known

11. Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity:**
    - **LD/LC50 values that are relevant for classification:**
      - 67-68-S dimethyl sulfoxide
    - Oral LD50 14500 mg/kg (rat)
  - **Primary irritant effect:**
    - **on the skin:** No irritant effect.
    - **on the eye:** No irritating effect.
  - **Sensitization:** No sensitizing effects known.
  - **Additional toxicological information:**
    - The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.
    - When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

12. Ecological information

- **Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
  - **Persistence and degradability** No further relevant information available.
  - **Behaviour in environmental systems:**
    - **Bioaccumulative potential** No further relevant information available.
    - **Mobility in soil** No further relevant information available.
  - **Additional ecological information:**
    - **General notes:**
      - Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.
      - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
  - **Results of PBT and vPvB assessment**
    - **PBT:** Not applicable.
    - **vPvB:** Not applicable.
  - **Other adverse effects** No further relevant information available.

13. Disposal considerations

- **Waste treatment methods**
  - **Recommendation**
    - Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
  - **Uncleaned packagings:**
    - **Recommendation:** Disposal must be made according to official regulations.
    - **Recommended cleansing agent:** Water, if necessary with cleansing agents.
14. Transport information

- Maritime transport IMDG: 
  - Marine pollutant: No
- Special precautions for user Not applicable.
- Transport/Additional information: Not dangerous according to the above specifications.
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

15. Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- National regulations
- Technical instructions (air):
  - Class Share in %
    - NK 10-20
  - Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
  - Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16. Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
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24-hour contact in case of emergency:
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- **Trade name** 5x Reaction buffer
- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008** The product is not classified according to the CLP regulation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Void
- **Information concerning particular hazards for human and environment:**
  The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system:**
  The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.
- **Label elements**
- **Labelling according to EU guidelines:**
  Observe the general safety regulations when handling chemicals
  The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (GefStoffV).
- **Safety phrases:**
  35 This material and its container must be disposed of in a safe way.
- **Other hazards**
- **Results of PBT and vPvB assessment**
  PBT: Not applicable.
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3. Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.
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- **Additional information** For the wording of the listed risk phrases refer to section 16.

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- **Description of first aid measures**
- **General information** No special measures required.
- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.
- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing** Induce vomiting and call for medical help.
- **Information for doctor**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5. **Firefighting measures**

· **Extinguishing media**
· **Suitable extinguishing agents**
  CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.

6. **Accidental release measures**

· **Personal precautions, protective equipment and emergency procedures** Not required.
· **Environmental precautions:**
  Dilute with plenty of water.
  Do not allow to enter sewers/surface or ground water.
· **Methods and material for containment and cleaning up:**
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
· **Reference to other sections**
  No dangerous substances are released.
  See Section 7 for information on safe handling
  See Section 8 for information on personal protection equipment.
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7. **Handling and storage**

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· **Precautions for safe handling** No special measures required.
· **Information about protection against explosions and fires:** No special measures required.
· **Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and receptacles:** According to product specification
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** None.
· **Specific end use(s)** No further relevant information available.

8. **Exposure controls/personal protection**

· **Additional information about design of technical systems:** No further data; see item 7.
· **Control parameters**
· **Components with limit values that require monitoring at the workplace:** None
· **Additional information:** The lists that were valid during the creation were used as basis.
· Exposure controls
· Personal protective equipment
· General protective and hygienic measures
The usual precautionary measures should be adhered to when handling chemicals.
· Breathing equipment: Not required.
· Protection of hands: Protective gloves.
· Material of gloves: Synthetic gloves
· Penetration time of glove material
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· Flammability (solid, gaseous) Not applicable.
· Ignition temperature: 270°C
· Decomposition temperature: Not determined.
· Self igniting: Product is not selfigniting.
· Danger of explosion: Product does not present an explosion hazard.
· Explosion limits:
Lower: 1.8 Vol %
Upper: 63.0 Vol %
· Vapour pressure at 20°C: 23 hPa
· Density: Not determined
· Relative density: Not determined.
· Vapour density Not determined.
· Evaporation rate: Not determined.
· Solubility in / Miscibility with
Water: Fully miscible
· Segregation coefficient (n-octanol/water): Not determined.
· Viscosity:
dynamic: Not determined.
kinematic: Not determined.
· Solvent content:
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· Other information: No further relevant information available.
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12. Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
  - **Bioaccumulative potential** No further relevant information available.
  - **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
  - **General notes:**
    - Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.
    - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
  - **Results of PBT and vPvB assessment**
    - **PBT:** Not applicable.
    - **vPvB:** Not applicable.
  - **Other adverse effects** No further relevant information available.

13. Disposal considerations

- **Waste treatment methods**
- **Recommendation**
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- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16. Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing MSDS: Environmental Health and Safety.