



## Material Safety Data Sheet

Effective Date: February 2<sup>nd</sup>, 2010

Supersedes: October 28<sup>th</sup>, 2009

Xpert MTB/RIF

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### 1. Identification of the Material and Company/Undertaking

**Product name:** Xpert MTB/RIF Part Number: 900-0468  
**Common name:** Not applicable 900-0469  
**Compound name:** Not applicable

**Manufacturer:**  
**Cepheid**  
**904 Caribbean Drive**  
**Sunnyvale, CA 94089**  
**USA**

**Telephone Numbers:**  
(888) 838-3222 (6 AM – 5 PM Pacific time US)  
Outside of the US: 1 (408) 541-4191  
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CHEMTREC (800) 424-9300  
Outside of the US: 1 (703) 741-5500  
**E-mail:** techsupport@cepheid.com

The following MSDS is for the final finished product only as used in the laboratory that contains six (6) components, 5 of them are in cartridges. If manufacturing this product, consult the MSDSs for the individual ingredients and reagents.

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### 2. Hazards Identification

**Appearance:** This product contains 6 parts – 5 of the parts (beads, which are freeze-dried white powders and a liquid reagent) are contained in cartridges.

**Signal Word:** **CAUTION for handling of all other kit components**

**Hazard Overview:** **Bead components are contained in cartridges and will not present a hazard under normal use conditions; if cartridge is broken or damaged and beads are spilled or released, contact may cause reversible skin and eye irritation.**

**Reagent 1 and Reagent 2 are each not considered hazardous under US hazard communication regulations (29 CFR 1910.1200), EU directives for classification and labeling of substances or mixtures or the Global Harmonization System for classification and labeling of substances or mixtures.**

#### Statement of Known

**Hazard:** All components of this product would not be considered hazardous under normal conditions of use.

**EU Indicator of Danger:** Not applicable



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**EU Risk Phrases: All components of this product: Not applicable**

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### 3. Composition Information on Ingredients

This product consists of a cartridge with reagent beads to which aqueous reagents are added as part of an assay.

There are two **Bead 1 beads** in each cartridge, which are each a freeze-dried powder bead with the following hazardous ingredients:

Ingredient	CAS#	EINECs / ELINCS #	% Composition	EU Risk Phrase
Tween 20	9005-64-5	200-315-5	<5	R36/37/38
HEPES Acid and Salt	7365-45-9 (For Acid)	230-907-9 (For Acid)	<5	R36/37/38
Magnesium Chloride	7786-30-3	232-094-6	<5	R36/37/38
Bovine Serum Albumin	9048-48-6	232-936-2	<3	R42

All other ingredients of each of the **Bead 1** beads are either non-hazardous under US and EU regulations or GHS guidelines and/or at concentrations less than 1% in the mixture.

There are two (2) **Bead 2** beads in each cartridge, which are each a freeze-dried powder bead with the following hazardous ingredients:

Ingredient	CAS#	EINECs / ELINCS #	% Composition	EU Risk Phrase
Tween 20	9005-64-5	200-315-5	<5	R36/37/38
HEPES Acid and Salt	7365-45-9 (For Acid)	230-907-9 (For Acid)	<5	R36/37/38
Magnesium Chloride	7786-30-3	232-094-6	<5	R36/37/38
Bovine Serum Albumin	9048-48-6	232-936-2	<3	R42

All other ingredients of each of the **Bead 2** beads are either non-hazardous under US and EU regulations or GHS guidelines and/or at concentrations less than 1% in the mixture.

**Bead 3** is a freeze-dried powder bead contained in a cartridge with the following hazardous ingredients:



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Ingredient	CAS#	EINECs / ELINCS #	% Composition	EU Risk Phrase
HEPES Acid and Salt	7365-45-9 (For Acid)	230-907-9 (For Acid)	<10	R36/37/38

All other ingredients of the **Bead 3** are either non-hazardous under US and EU regulations or GHS guidelines and/or at concentrations less than 1% in the mixture.

**Reagent 1 and Reagent 2** each contain ingredients that are either considered non-hazardous under US and EU regulations or GHS guidelines and/ or at concentrations less than 1% in the mixture.

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### 4. First Aid Measures

- Eye:** Flush thoroughly with water and notify supervisor and EHS personnel. If an irritation develops, get medical aid.
- Skin:** Flush thoroughly with water and notify supervisor and EHS personnel. If an irritation develops, get medical attention.
- Ingestion:** If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do not induce vomiting unless directed to do so by medical personnel.
- Inhalation:** Remove to fresh air and get medical attention for any breathing difficulty.

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### 5. Fire Fighting Measures

- Flammability/Explosivity:** All components of the kit are not flammable or explosive.
- Extinguishing Media:** CO<sub>2</sub>, multipurpose dry chemical or vaporizing liquid fire extinguisher.

**Special Fire Fighting Procedures:**

Wear full protective clothing and a self-contained breathing apparatus with a full facepiece operated in the pressure demand or other positive pressure mode for surrounding fire. Decontaminate all equipment after use.

**Hazardous Decomposition Products:** Product may emit oxides of nitrogen and carbon in a fire.



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## 6. Accidental Release Measures

### For all components if spilled:

If product/material is released or spilled, take proper precautions to minimize exposure by using appropriate personal protective equipment. For small spills, wear gloves and absorb spill with paper towel. Dispose of material according to local, State and Federal waste disposal regulations (see Section 13).

For larger spills, wear personal protective clothing to minimize exposure such as overgarment, gloves and eye protection (goggles), cover spill with absorbent material. Collect spilled material, absorbent, and rinse waters into suitable containers for proper disposal in accordance with applicable local, state or Federal waste disposal regulations (see Section 13).

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## 7. Handling and Storage

**Handling Precautions:** Avoid skin contact, eye contact and inhalation. Do not smoke or handle near heat or fire. Avoid fire, flame or smoking during use.

**Storage Requirements:** Store according to product labeling

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## 8. Exposure Controls/Personal Protection

### Occupational Exposure

**Limits:** None of the ingredients contained in this product have occupational exposure limits established by OSHA, NIOSH, ACGIH or Cepheid.

**Engineering Controls:** None normally required. When practicable, handle material in enclosed or contained processes or in processes with effective local exhaust ventilation.

**Eye Protection:** Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face.

**Respiratory Protection:** When possible, handle material in enclosed processes or containers. If it is properly handled with effective ventilation or containment, respiratory protection should not be needed.

**Skin Protection:** Rubber gloves are recommended to minimize potential for skin contact. In laboratory setting, wear lab coat or other protective overgarment at a minimum to minimize skin contact. Base the choice of protection on the job activity and potential for skin contact.

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**Other:** Facilities storing or using this product should be equipped with an eyewash station and a safety shower. Wash hands, face and other potentially exposed areas immediately after handling material (especially before eating, drinking, or smoking). Decontaminate all protective equipment after use.

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## 9. Physical and Chemical Properties

**Physical State:** Beads are solid components in cartridges; reagents are liquids which are primarily buffered aqueous solutions.

**Odor:** Components are odorless.

**Vapor Pressure:** Minimal.

**Evaporation Rate:** Minimal.

**Viscosity:** Reagents are aqueous.

**Boiling Point:** Liquid reagents near 100 degrees C.

**Freezing/Melting Point:** Liquid reagents near 0 degrees C

**Solubility:** Reagents are already aqueous; beads are soluble in aqueous solutions

**pH:** 6.6 – 8.6 (Beads & other liquid reagents)

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## 10. Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** Incompatible materials.

**Incompatibilities with Other materials:** Strong oxidizing agents, peroxides, strong acids and bases, acid chlorides, acid anhydrides, alkali metals, ammonia.

**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide, nitrogen oxides, sulfur oxides, sodium oxides, potassium oxides, hydrogen chloride, cyanide.

**Hazardous Polymerization:** Will not occur.

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## 11. Toxicological Information

**Acute Toxicity:** The cartridges containing freeze-dried powders should not present an acute toxicity hazard unless the beads are released or spilled. Magnesium chloride has low to moderate acute toxicity with oral LD50 of 2800 mg/kg in the rat. Tween-20 has low acute oral toxicity.

**Irritation/Sensitization:** HEPES Salt and HEPES acid are considered skin and eye irritants. Bovine serum albumin, as a foreign protein is considered a potential allergen but because it is contained in the bead within the cartridge, the potential to cause an allergic reaction under normal use conditions is considered low.



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**Repeated dose toxicity:** Tween-20 has low repeated dose toxicity in laboratory animals. No data identified on other ingredients.

**Reproductive (fertility) and Developmental (birth defects) toxicity:** None of the ingredients are considered reproductive or developmental toxicants.

**Mutagenicity and Carcinogenicity:** No data on ingredients. None of the ingredients are listed by NTP, IARC or OSHA as carcinogens.

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## 12. Ecological Information

**Ecotoxicity:** No data on all ingredients.

**Environmental Fate:** No data identified.

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## 13. Disposal Considerations

Biological specimens, including used cartridges, should be treated as capable of transmitting infectious agents. Consult your institution's environmental waste personnel on proper disposal of used cartridges and unused reagents. This material may exhibit characteristics of federal EPA Resource Conservation and Recovery Act (RCRA) hazardous waste requiring specific disposal requirements. Check state and local regulations as they may differ from federal disposal regulations. Institutions outside the USA should check their country hazardous waste disposal requirements.

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## 14. Transport Information

Transport in accordance with all federal, state, and local transportation regulations.

All of the components are not regulated by US DOT or IATA.

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## 15. Regulatory Information

**US OSHA:** This MSDS complies with the requirements under 29 CFR 1910.1200

### Canada – WHMIS Classifications

The product and each of its component parts do not meet classification criteria according to WHMIS.

### California Proposition 65

None of the ingredients are listed under California Proposition 65.

**SARA 313:** Not listed.

**CERCLA :** Not listed.



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RCRA: Not listed.

For R&D consumers, products are to be used only for R&D purposes.

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## 16. Other Information

No other data available.

### Abbreviations:

ACGIH:	American Conference of Governmental Industrial Hygienists
CAS#:	Chemical Abstract Services Number
CFR	Code of Federal Regulations
CERCLA:	Comprehensive Environmental Response, Compensation, and Liability Act
DOT:	Department of Transportation
EINECS:	European Inventory of New and Existing Chemical Substances
EU:	European Union
GHS:	Global Harmonization System
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association
OSHA:	Occupational Safety and Health Administration
NTP:	National Toxicology Program
RCRA:	Resource Conservation and Recovery Act
SARA:	Superfund Amendments and Reauthorization Act
TSCA:	Toxic Substances Control Act
WHMIS:	Workplace Hazardous Materials Information System

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