

## Section 1 - Infectious Agent

**Agent Name:** Rhodospirillum rubrum

**Agent Type:** Bacteria

**Taxonomy:**

Family: Rhodospirillaceae

Genus: Rhodospirillum

Species: *R. rubrum*

Subspecies/Strain/Clonal Isolate:

### Synonym/Cross Reference

None

### Characteristics

**Brief Description:** Gram-negative, mesophilic proteobacteria. Its optimal growth temperature is 25-30 degrees Celsius. It has multi-layered outer envelopes, which contain mostly unsaturated, but some saturated fats in its cell wall. *R. rubrum* is a spirilla, meaning it has a spiral-shape. It is polarly flagellated, and therefore motile. Its length is 3-10 um, with a width of 0.8-1.0 um.

**Properties:** *R. rubrum* is a facultative anaerobe. Depending on the presence of oxygen, it can undergo alcoholic fermentation or aerobic respiration. It also is capable of photosynthesis and contains carotenoid and bacteriochlorophyll in its chromatophore particles. These molecules help to absorb light and convert it to energy and also give it its distinct purple-red color under anaerobic conditions. *R. rubrum* is colorless under aerobic conditions.

## Section 2 - Hazard Identification

### Pathogenicity/Toxicity

Not a human or animal pathogen

**Predisposing Factors:** None

### Communicability

Not applicable

### Epidemiology

Not applicable

### Host Range

**Natural Host(s):** None

**Other Host(s):** Not applicable

### Infectious Dose

Not applicable

### Incubation Period

Not applicable

## Section 3 - Dissemination

### Reservoir

Water and mud.

<b>Vectors</b> None
<b>Zoonosis / Reverse Zoonosis</b> None
<b>Section 4 - Dissemination</b>
<b>Drug Susceptibility</b> Not applicable
<b>Drug Resistance</b> Not applicable
<b>Susceptibility to Disinfectants</b> 70% ethanol
<b>Physical Inactivation</b> Inactivation and sterilization using moist heat should be at 121°C for 15 minutes or longer, dry heat at 170 - 250°C or higher for 30 minutes or more.
<b>Survival Outside Host</b> Water borne organism
<b>Section 5 - First Aid and Medical</b>
<b>Surveillance</b> Not a disease causing agent.
<b>First Aid / Treatment</b> Not applicable
<b>Immunization</b> Not applicable
<b>Prophylaxis</b> Not applicable
<b>Section 6 - Laboratory Hazards</b>
<b>Laboratory Acquired Infections</b> None reported
<b>Sources / Specimens</b> Not applicable
<b>Primary Hazards</b> None
<b>Special Hazards</b> None
<b>Section 7 - Exposure Controls and Personal Protection</b>

**Risk Group Classification**

What is the Risk Group classification in humans and animals for the pathogen?

Human Risk Group Classification RG1

Animal Risk Group Classification RG1

**Containment Requirements**

Containment Level: CL1

**Containment Zone Requirements:**

Containment Level 1 facilities, equipment, and operational practices for work involving infectious or potentially infectious materials, animals, or cultures.

**Protective Clothing**

Lab coat. Gloves when direct skin contact with infected materials or animals is unavoidable. Eye protection must be used where there is a known or potential risk of exposure to splashes.

If there are no special hazards for this agent enter "none".

**Other Precautions**

All procedures that may produce aerosols, or involve high concentrations or large volumes should be conducted in a biological safety cabinet (BSC). The use of needles, syringes, and other sharp objects should be strictly limited. Additional precautions should be considered with work involving animals or large scale activities.

**Section 8 - Handling and Storage****Spills**

Allow aerosols to settle. Wearing protective clothing, gently cover the spill with absorbent paper towel and apply suitable disinfectant, starting at the perimeter and working towards the centre. Allow sufficient contact time before clean up.

**Disposal**

Decontaminate all wastes that contain or have come in contact with the infectious organism by autoclave, chemical disinfection, gamma irradiation, or incineration before disposing.

**Storage**

The infectious agent should be stored in appropriately labelled leak-proof containers in a locked area. Containers of infectious material or toxins stored outside the containment zone must be labelled, leakproof, impact resistant, and kept either in locked storage equipment or within an area with limited access.

**Section 9 - Regulatory Information**

The import, transport, and use of pathogens in Canada is regulated under many regulatory bodies, including the Public Health Agency of Canada, Health Canada, Canadian Food Inspection Agency, Environment Canada, and Transport Canada. Users are responsible for ensuring they are compliant with all relevant acts, regulations, guidelines, and standards.

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Revisions were made to Sections:

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**References**

Risk Group determination from "PHAC Biological Agent Search".