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# **STAPHYLOCOCCUS EPIDERMIDIS**

## **(ATCC 35983)**

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### **PATHOGEN SAFETY DATA SHEET**

#### **/ INFECTIOUS SUBSTANCES**

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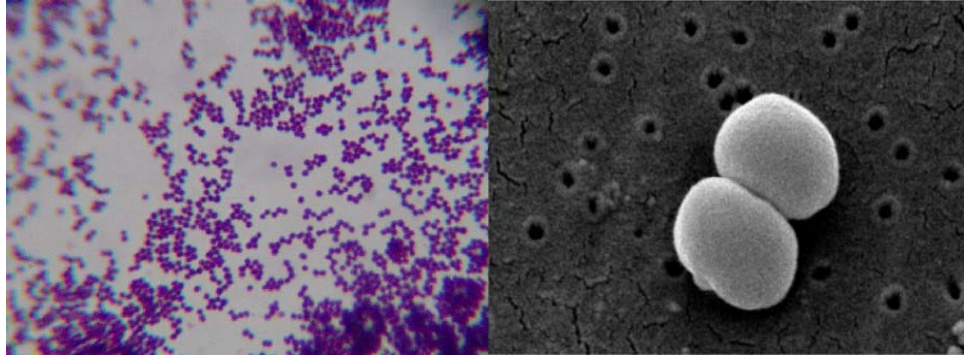
#### **INFECTIOUS AGENT**

**NAME:** *Staphylococcus epidermidis*

**GENERAL:** *Staphylococcus epidermidis* is one of thirty-three known species belonging to the genus *Staphylococcus*. It is part of human skin flora and can also be found in the mucous membranes and in animals. It is the most common species found in laboratory test due to contamination.

*S. epidermidis* is not usually pathogenic; however, patients with a compromised immune system often risk infection. Infections can be both nosocomial and community acquired and are more of a threat to hospital patients. Hospitals carry more virulent strains of the organism due to the constant use of antibiotics and disinfectants. It is also a major concern for people with catheters or other surgical implants due to it causing biofilms that grow on these devices. The ability to form biofilms on plastic devices is a major virulence factor for *S. epidermidis*. Surface proteins bind blood and extracellular matrix proteins. *S. epidermidis* strains are often resistant to antibiotics including penicillin, amoxicillin, and methicillin. Since antibiotics are mostly ineffective in clearing biofilms, the most common treatment is to remove or replace the plastic implant. Prevention is ideal in all cases in which vancomycin is the most common drug used to do this. Resistant organisms are most commonly found in the intestine although organisms on the skin can become resistant to routine exposure to antibiotics secreted in sweat.

**CHARACTERISTICS:** *S. epidermidis* is catalase-positive, coagulase negative, facultative anaerobe, non-motile Gram-positive cocci, arranged in grape-like clusters. It can grow by aerobic respiration or by fermentation. It is sensitive to novobiocin, providing an important test to distinguish it from *Staphylococcus saprophyticus*, which is coagulase-negative as well but novobiocin-resistant.



*Staphylococcus epidermidis*, gram-stained<sup>1)</sup>

*Staphylococcus epidermidis* cells<sup>2)</sup>

**NAME:** *Staphylococcus epidermidis* ATCC 35983

## HAZARD IDENTIFICATION

This substance is not hazardous as defined by OSHA 29CFR 1910.1200 however this product (*S. epidermidis* ATCC 35983) should be handled according to good lab practices, with proper personal protective equipment, proper engineering controls and within the parameters of the purchaser's safety program.

**HEALTH HAZARDS:** ATCC recommends that all ATCC microbial cultures be handled by qualified microbiologists using appropriate safety procedures and precautions. Detailed discussions of laboratory safety procedures are provided e.g. in the U.S. Government Publication, Biosafety in Microbiological and Biomedical Laboratories (BMBL). This publication is available in its entirety in the Center for Disease Control and Prevention web site at <http://www.cdc.gov/biosafety/publications/bmbl5/index.htm>.

## FIRST AID MEASURES

**Ingestion:** If person is unconscious seek emergency medical attention; never give anything by mouth to an unconscious person. If the person is conscious wash mouth out with copious amounts of water and call a physician then administer three cupfuls of water. Do not induce vomiting unless directed to do so by a physician.

**Inhalation:** If person is unconscious seek emergency medical attention, if person is conscious remove to fresh air and call a physician.

**Dermal exposure:** Immediately wash skin with copious amounts of water followed by washing with soap and copious amounts of water. Remove all contaminated clothing.

**Eye exposures:** Flush eyes with copious amounts of water for at least 15 minutes with eyelids separated and call a physician.

## ACCIDENTAL RELEASE MEASURES:

### Procedure of Personal Precaution:

**At a minimum use the following PPE: Wear laboratory coat, gloves and eye protection. Avoid all contact.**

### Methods for Cleaning Up:

**Patient/Victim:** Wash with soap and water. Work clothes should be laundered separately. Launder contaminated clothing before re-use. Do not take clothing home.

**Equipment/Environment:** Allow aerosols to settle; wearing protective clothing, gently cover spill with paper towel and apply 1% sodium hypochlorite, starting at perimeter and working towards the center; allow sufficient contact time before clean up (30 min).

**Note: The use of additional PPE may be necessary for cleaning solutions.**

## EXPOSURE CONTROLS / PERSONAL PROTECTION

**Use Personal Protective Equipment:** Including Eye Protection, Chemical Resistant Gloves, and appropriate clothing to prevent skin exposure. In addition, a Respiratory protection program that complies with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use.

**Engineering Controls:** The use and storage of this material requires user to maintain and make available appropriate eyewash and safety shower facilities. Use fume hood or other appropriate ventilation method to keep airborne concentrations as low as possible.

**Exposure Limits:** No exposure limits for this material have been established by ACGIH, NIOSH, or OSHA.

## DISPOSAL CONSIDERATIONS

Decontaminate all wastes before disposal (steam sterilization, chemical disinfection, and/or incineration). Dispose of in accordance with applicable regulations.

## REFERENCE

PSDS for *Staphylococcus epidermidis* (ATCC 35983) is modified from American Type Culture Collection information for this strain.

- 1) Picture from [www.flickr.com](http://www.flickr.com)
- 2) Picture from Wikipedia