

CHEMICAL SAFETY

Standard Operating Procedure (SOP)

<i>Title:</i>	Sodium Orthovanadate	<i>WFUHS</i>
<i>Approved by:</i>	<i>Effective Date: November 26, 2007</i>	<i>SOP#</i>
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PURPOSE

The purpose is to use sodium orthovanadate, a proteinase inhibitor used in lysis buffer to inhibit the degradation of protein in cell lysis preparations in a safe manner.

SCOPE

The scope of sodium orthovanadate is use in a laboratory environment.

HEALTH, SAFETY, ENVIRONMENTAL INFORMATION

Physical Hazards

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, dust generation.

Incompatibilities with Other Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Vanadium oxide (VOx) gases.

Hazardous Polymerization: Has not been reported.

Health Hazards

Eye: May cause eye irritation.

Skin: May cause skin irritation. Harmful if absorbed through the skin.

Ingestion: Harmful if swallowed. May cause irritation of the digestive tract.

Inhalation: Harmful if inhaled. May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated.

Chronic: Laboratory experiments have resulted in mutagenic effects.

Signs and Symptoms of Exposure

Vanadium compounds can cause metallic taste and a greenish discoloration of the tongue. Exposure can cause coughing, wheezing, respiratory distress, tremors, headaches and diarrhea.

Personal Protective Equipment

- **Eye Protection**

- Safety glasses, goggles or face shields shall be worn during operations in which sodium orthovanadate might contact the eyes (e.g., through vapors or splashes of solution).
- Ordinary (street) prescription glasses do not provide adequate protection. Adequate safety glasses must meet the requirements of the Practice for Occupational Education Eye and Face Protection (ANSI Z87.1-1989) and must be equipped with side shields.
- Contact lenses shall not be worn if the potential exist for sodium orthovanadate exposure.

- **Hand Protection**

- Nitrile gloves impervious to sodium orthovanadate shall always be worn – Safeskin Purple Nitrile Xtra Exam Gloves, 12 inches long, catalog # 19-149-864 (Fisher Scientific).

- **Lab Coats, etc.**

- Lab coat, closed-toe shoes and long-sleeved clothing shall be worn when handling sodium orthovanadate. Protective clothing shall be worn to prevent any possibility of skin contact with sodium orthovanadate.
- **Safety Shower / Eye Wash**
 - Where the eyes or body of any person may be exposed to sodium orthovanadate, suitable facilities for quick drench or flushing of the eyes and body shall be provided within the work area for immediate emergency use.
 - Bottle type eyewash stations are not acceptable.

Designated Area for Use and Containment Devices

All sodium orthovanadate work shall be done in the laboratory fume hood.

The fume hood's sash must be in the position where a face velocity of 100 feet per minute is achieved.

Waste Disposal

Full containers of sodium orthovanadate must be disposed of according to WFUHS EH&S Hazardous Waste Program.

Decontamination of Equipment and Area

Contact WFUHS EH&S at 716-1201 for decontamination information.

Spill and Accident Procedures

In the event of a liquid spill greater than 300cc, immediately vacate and secure the area. Contact WFUBMC Security at 716-9111.