is less than the maximum rotation speed specified for the rotor when it is new) after a specified amount of use, and eventually taken out of service and discarded. Therefore, it is important to have a separate log book for the use of each rotor to record the speed and length of time for each use.

An unbalanced load and metal fatigue caused this rotor to split in the middle while spinning at 55,000 rpm.

Emergency Procedures

In case of a centrifuge malfunction, rotor failure, or test tube failure, a risk exists of hazardous chemicals and/or infectious material being released as aerosols.

If a centrifuge malfunctions while in operation, it must be turned off immediately and unplugged.

The operator, wearing gloves, should remove all debris and clean and disinfect the interior of the centrifuge and the head (or cups) according to the manufacturer's instructions.

If the problem was a result of broken or damaged equipment, take the centrifuge out of service and notify your supervisor of the needed repairs.

Getting Assistance

If you have questions about centrifuge use, care, or cleaning, contact the manufacturer directly.

For assistance with incident/spill clean up and decontamination, contact EH&S.

WASHINGTON STATE UNIVERSITY

Environmental Health & Safety
P.O. Box 641172
Pullman, WA 99164-1172
(509) 335-3041

Wenatchee....509-663-8181
TriCities.....509-372-7163
Vancouver.....360-546-9706
Spokane.....509-358-7500

http://www.ehs.wsu.edu

Environmental Health & Safety

Centrifuge Safety

High-Speed Hazards

Centrifuges are important pieces of equipment. When used properly, they can perform well and for a long time. However, when abused, they become defective quickly and can create very real hazards.

Safe Centrifuge Use

It is essential that all centrifuges be used, cared for, and maintained in a safe manner. Possible damage from a centrifuge accident can include damage to the unit, the laboratory, and other lab equipment, as well as chemical spills and fires and injury to lab personnel. To prevent centrifuge accidents:

- Familiarize yourself with the operating procedures written by the manufacturer of your centrifuge. Keep the manual near the unit for easy reference, and contact the manufacturer to replace a lost manual.
- Handle, load, clean and inspect rotors as recommended by the manufacturer.
- Always make sure that you have secured the lid to the rotor and the rotor to the centrifuge.
- Lids shall be closed at all times during operation. Never open a centrifuge until the rotor has stopped.

- Pay careful attention to the instructions for balancing your samples. Don't leave the centrifuge until full operating speed is attained and machine appears to be running safely without vibration.

- If vibration occurs, stop the centrifuge immediately and check load balances.
- Check the condition of tubes and bottles every time you use the centrifuge. Discard tubes that are cracked or worn.

- Use only the types of rotors that are specifically approved for use in a given centrifuge unit.
- With infectious/biologically hazardous material, wait 10 minutes after the rotor has stopped before opening the centrifuge. Allow aerosols to settle, then wipe the rotor and centrifuge interior thoroughly.
- Maintain the centrifuge in good condition. Broken door latches and other problems should always be repaired before any use of the centrifuge unit.

Care and Maintenance

- Read and follow the manufacturer's recommendations in the manual regarding cleaning, polishing, inspections and lubricating the o-rings.
- Clean all spills immediately and decontaminate the rotor after use with radioactive or biological materials
- Rotors and cups should be cleaned and disinfected after each use with non-corrosive cleaning solutions (mild detergent and distilled water is recommended). All traces of detergents should be removed prior to air drying.

- Store the rotor upside down, in a warm, dry place, to prevent condensation in the tubes.
- Test tube brushes must not be used for cleaning the cup cavities.
- Remove adapters after use and inspect for corrosion.
- Remove from use any rotor that has been dropped or shows any sign of defect, and report it to a manufacturer's representative for inspection.

Maintaining a Log Book

To avoid catastrophic rotor failure, many types of rotors must be "de-rated" (limited to a maximum rotation speed that