

## INTRODUCTION

A centrifugal separator is used to separate liquid mixtures into separate liquids while simultaneously removing any solids that might be contained in the liquids. Centrifuges are often used as part of the brewing process instead of traditional filtration techniques to increase final product yield, produce a more regular and thorough filtration, and allow for easier disposal of yeast, dry hops, and proteins. Employees who work with or around these complex pieces of equipment could potentially be exposed to harm. Following the safe work practices presented in this lesson will help ensure employee safety.



## HAZARDS

Employees who use or work near a centrifuge could potentially be exposed to the following hazards:

- Slipping and falling
- Pinch points (areas where long hair, jewelry, loose clothing, and extremities can get caught)
- Exposure to loud noises
- Exposure to oil and lubricants
- Burns
- Electrocution
- Cuts or lacerations



## PERSONAL PROTECTIVE EQUIPMENT (PPE)

Employees should wear the appropriate personal protective equipment, which may include:

- Slip resistant shoes
- Close-fitting clothing
- Hearing protection



## SAFE WORK PRACTICES

Before working with or around a centrifuge, employees should do the following:

- Tie back long hair and remove all jewelry.
- Inspect all provided PPE for damage. Report all damaged PPE to your supervisor. Do NOT wear damaged PPE.
- Check around and under machine for leaks. Report leaks to your supervisor. Do NOT operate the centrifuge when leaking.
- Inspect the centrifuge for mechanical stress, metal fatigue, or corrosion. Report all damage to your supervisor. Do NOT operate a damaged centrifuge.
- Ensure all guards and machines connected to the centrifuge are in place and secured.
- Ensure the liquids being separated do not exceed the maximum density and temperature as specified by the manufacturer.
- Ensure all safety markings are attached and visible. Report any worn or missing safety markings to your supervisor.

While working with or around a centrifuge, employees should do the following:

- Turn off the centrifuge immediately if you notice any wobbling, shaking, or unusual noises. Notify a supervisor immediately. Do NOT operate a centrifuge that is unbalanced or is otherwise operating unusually.
- Only qualified and authorized employees may operate, maintain, and repair the centrifuge.
- Ensure the centrifuge does not exceed the maximum speed as specified by the manufacturer.
- Ensure the centrifuge is not overfilled beyond what is specified by the manufacturer.
- Stay at a safe distance from the centrifuge when in operation.
- Practice good hygiene.

When maintaining a centrifuge, employees should do the following:

- The centrifuge must be regularly maintained and stress-tested to ensure proper and safe operation.
- Ensure centrifuge has completely stopped before loosening or removing any parts.
- Any work on electrical components may only be carried out by an authorized electrician.
- Never increase the maximum bowl speed through electrical or electronic manipulation of the drive.
- Replace broken or damaged parts immediately. Only use parts designed or produced specifically for the centrifuge.
- Ensure all lockout/tagout procedures are followed.

## CONCLUSION

It can be dangerous to work with or around a centrifuge. Employees could potentially be exposed to both physical and health hazards. By following the safe work practices presented in this lesson, employees can help minimize their chances of an accident occurring while working with or around a centrifuge.

