



UNC CHARLOTTE

Department of Engineering Technology

# LABORATORY SAFETY ANALYSIS

## OPERATING A SAMPLE MIXER


Location: Smith 131 and Smith 134

Required Training: Sample mixers are designed and intended for use by properly trained and experienced operators. If you are not familiar with the proper and safe operation of this type of apparatus, do not use until proper training and knowledge have been obtained.

Required Personal

Protective Equipment (PPE): Safety glasses, dusk mask in dusty work conditions, face shield in addition to safety glasses if material has a tendency to splatter, leather gloves when handling hot samples, and closed toed shoes.

Reference Materials: Manufacturer's safety rules and operating instructions

PHOTOS	TASK	HAZARDS	CONTROLS
	Remove all jewelry. Wrap long hair in net. Ensure clothing is sturdy and snug. Loose clothing, gloves, neckties, rings, bracelets, or other jewelry may get caught in moving parts.	Caught in mixer	<ul style="list-style-type: none"> <li>Do not wear any jewelry that may get caught in the blade or moving parts.</li> <li>Do not wear gloves when operating the sample mixer.</li> <li>Loose clothing may get caught in moving parts.</li> </ul>
	Wear clear safety glasses with side shields and if necessary use a dust mask and face shield if material will splatter	Flying debris, dust particles, and splatter	<ul style="list-style-type: none"> <li>Students are required to provide their own safety glasses.</li> <li>See laboratory instructor or laboratory manager if you do not have safety glasses before proceeding to use equipment.</li> </ul>
	Inspect safety glasses for cracks, scratches or other damage. Ensure the ANSI standard Z87.1 is stamped into the side of glasses. If necessary inspect dust mask or face mask.	Flying debris, dust particles, and splatter	<ul style="list-style-type: none"> <li>If defects are found report this to your laboratory instructor before using.</li> </ul>
	Put on all necessary PPE	Flying debris, dust particles, and splatter	<ul style="list-style-type: none"> <li>Always wear safety glasses. Use a dust mask in dusty work conditions.</li> <li><b>Do not wear gloves during operation of mixer.</b></li> </ul>
	Visually inspect the electrical power cord.	Electrical shock	<ul style="list-style-type: none"> <li>If the electrical cord is damaged or worn the electrical cord should be unplugged and</li> </ul>

			tagged "Out of Service-Do Not Use". <ul style="list-style-type: none"> <li>This should be reported to the laboratory manager immediately.</li> <li>Electrical cord replacement should only be conducted by a factory authorized technician.</li> </ul>
	Ensure the electrical cord is connected to electrical outlet.	Electrical shock	<ul style="list-style-type: none"> <li>Caution: Always remember to disconnect the electrical power cord before changing mixer blades.</li> </ul>
	Inspect work area, walk around mixer area looking for debris and ensure adequate lighting.	Slips, trips & falls	<ul style="list-style-type: none"> <li>Remove any debris that could possible cause a injury. Keep work space around mixer free from old soil, aggregate, asphalt, oil or grease.</li> <li>Make sure the sample mixer is located on a level surface, with plenty of clearance for proper operation.</li> </ul>
	Placing the material to be mixed in the mixer	Strain, Struck by	<ul style="list-style-type: none"> <li>Use the proper lifting techniques, ask for assistance or obtain a mechanical lifting device for large or heavy materials.</li> <li>Be certain that hand tools and any other preparation materials are removed from mixer before operating the mixer.</li> <li>Ensure that the mixing bowl is properly positioned and locked into the mixer.</li> </ul>
	Visually Inspect guards	Cut, injury	<ul style="list-style-type: none"> <li>Ensure that the upper mixer guard is in place and properly secured before operating the mixer.</li> </ul>
	Operating mixer by turning the switch to the "ON" position	Struck by flying debris, laceration, Injury	<ul style="list-style-type: none"> <li>Devote your individual attention to the work being performed.</li> <li>Guards should be in place and used at all time.</li> <li>Never leave the mixer unattended while in motion</li> </ul>
	Turn off sample mixer by switching the button to "OFF" position	Cut, injury	<ul style="list-style-type: none"> <li>Always turn the power off and wait to the blade stops before removing mixing bowl.</li> </ul>
	Remove mixed materials	Cut	<ul style="list-style-type: none"> <li>Never stop the blade by using your hand.</li> <li>Always unplug mixer before removing the mixing blade.</li> </ul>
	Clean work area and return all PPE to clean, dry storage area.	Injury	<ul style="list-style-type: none"> <li>To ensure adequate housekeeping measures to prevent accidents.</li> </ul>

For more information about this LSA, contact the *Department of Engineering Technology* at UNC Charlotte (704) 687-2305  
 Please visit our website at: <http://www.et.uncc.edu/>

***The development of Laboratory Safety Analyses is a very effective means of helping reduce incidents, accidents, and injuries in the workplace. It is an excellent tool to use for training purposes and can also be used to investigate "near misses" and accidents.***