Standard Operating Procedure (SOP) for Ball Mill and Mixer Mill
Main parts of Ball Mill

- Roller
- Motor
Porcelain jar

Porcelain balls
Scope and Application

- It is used for crushing and homogenizing soft, fibrous, hard and brittle material (wet and dry)

- Totally enclosed DC drive motors permit solid state control of speed.

- Machines have speed range between 20 and 300 RPM.
What are the Safety Measures we need to Take?

- Wear the usual safety measures such as safety glasses, Laboratory coat, Glove and Foot wear which covers toes. No loose clothing, jewelry, or hair.

- Keep a solvent spill kit near the Ball Mill.

- Keep the MSDS of the material and solvents to be used near the Ball Mill.

- Before operating the machine make sure electric power connections are made correctly and power cable is not damaged.

- Before inserting the sample jar, turn on the mill and check the sound, if it is so noisy put some oil on the bearings.
Operating Procedure

- Choose a jar based on the amount of material being grinded.

- Take the material in the porcelain jar and add 1:20 wt ratio porcelain balls, screw the cap tightly.

Mill in use notification

a) Write your name and phone number,
b) Alternate contact information,
Information about material and solvents being used,
Emergency termination instruction,
Date and duration of your use.

Turn off procedure: Turn off the power
Operating Concerns

Pinch Points
Rollers can catch
Loose clothing, jewelry, hair

Electrical Motor
Keep open sources of water/solvents away
Mixer Mill : Type MM 200

- Clamping screw E
- Buckle D
- Plexiglas cover
- Rotary knob for frequency setting L
- Rotary knob for time setting J
- Stop
- Start
- Grinding jars and grinding balls.
Scope and Application

- Crushing and homogenizing soft, fibrous, hard and brittle material.

- Designed to process very small samples of approximately 0.5 to 0.8 ml.

- Used for fast ultrafine grinding for two samples simultaneously.

- Best result is obtained when the grinding jar is one third filled.

- Exceptions to this material such as wool, foliage, grasses etc (70-80%) of capacity.

- Material of the grinding jar and grinding ball must be same otherwise grinding ball may damage grinding jar.
Operating procedure

- To ensure the smooth running put equal weights on both grinding jars
- Loosen buckle E and unscrew clamping screw D
- Insert the grinding jars, Clamp them tightly in place with clamping screw D
- Check with buckle E, close the Plexiglas cover
- Turn on the main switch, located rear of the MM 200
Operating procedure continued

- The LED above the stop button flashes briefly after the machine has been turned on.
- Time display shows the parameters last used.
- The frequency display shows parameters last used.
- Running time can be set in 10 sec-99min by turning knob J.
- Set frequency between 3-30 Hz by turning knob L.
- Press the start button.
- Do not open the Plexiglas cover during grinding. The motor brake will bring the grinding jars to a stand still, the grinding process can not be continued for the remaining time.
Turn off procedure

- Turn off the main switch, located rear of the MM 200
- Unscrew the buckle E to the end of clamping screw D
- Remove the grinding jars

Cleaning the jar

- Do not clean MM 200 jar on running water
- Danger from electric shock
- Use moist cloth only. No solvents!