



TESTING MACHINES, INC.

## Technical Tips: Coefficient of Friction Tester

### Factors Affecting COF Measurements

#### Check the following:

- When performing a comparison test of two or more instruments, it is possible that the rubber surfaces of the old and new sleds are different. Try using the same sled on both instruments. This will remove the variability of the sled in your comparative analysis. Rubber texture, rubber hardness and surface area of the sled can affect the results.
- When evaluating repeatability between two or more friction testers, the condition/roughness of the plate surfaces must be the same. When testing thin films, the surface texture of the plate will transfer through the film, affecting the reading.
- Check the edges of the rubber pad on the bottom of the sled for wear. The pad should cover the entire surface and should not be worn around the edges. Replace the pad if necessary.
- Check the surface of the neoprene pad on the sled bottom. The hardness should be 70 durometer.
- Check that the instrument reads ZERO before testing.
- **Important!** Do not re-zero the instrument after the sled is connected to the load cell, before the test begins.
- Check the pre-load on the instruments display after connecting the sled to the load cell. The force before the test begins should be 15 grams or less.
- The test speed should be set to 150mm/minute (6 inches/minute) following ASTM D 1894.
- The STATIC TIME setting should be at least 1200 milliseconds on the 32-07 model.
- After placing the sled on the sample, make sure the time the sled is resting on the sample before the test starts is consistent between each measurement. This is called the dwell time.
- Test the same direction and side of the material on the sled and test plate. Machine direction (MD) and cross direction (CD) of the tested samples should be the same.
- Remove any wrinkles on the film when placing it on the test plate.
- When comparing samples in different labs, make sure the instrument settings are the same.
- When comparing samples in different labs, the temperature and humidity conditions in the labs should be same. **NOTE:** Humidity changes can affect kinetic results.
- When performing interlaboratory studies, it is recommended to use a glass plate to test the specimen.
- Before testing, carefully place the sled onto the film when loading the specimen. Do not move the sled after it is placed on the test film.
- Check the anti-skew arm which rests over the back of the sled on the 32-07 and 32-76 to make sure it is not touching the sled.