A Multi-Sample Melt Micro-Rheometer KALMAN MIGLER, NIST, ANTHONY BUR — We have developed a multi-sample melt micro-rheometer (M3R) based on pressure driven channel flow and designed for simultaneous measurement of multiple polymer melts. The required sample size is less than 100 mg. The driving force for the rheometer is pressurized gas from a nitrogen tank that forces polymer melt into a slit. The melt flow is monitored using a video camera that views the flow front through a sapphire window. The device contains no moving parts and no gaskets or O-rings. Measurements of polyethylene and polycarbonate are presented.