**EXPERIMENT NO. - 6**

**Object:** Determination of Shore A Hardness of given Rubber Sheet

**Equipment:** Shore A Durometer

Test Method: ASTM D2240 00, ISO 7619 and ISO 868

**Significance:** The hardness of rubbers is most commonly measured by the Shore A Durometer test. The durometer measures the resistance of rubbers toward indentation and provide an empirical hardness value and is the preferred method for rubbers/elastomers and is also commonly used for 'softer' plastics such as polyolefins, fluoropolymers, and vinyls. The Shore A scale is used for 'softer' rubbers while the Shore D scale is used for 'harder' ones. The hardness value is determined by the penetration of the Durometer indenter foot into the sample. Because of the resilience of rubbers and plastics, the indentation reading my change over time - so the indentation time is sometimes reported along with the hardness number

The results obtained from this test are a useful measure of relative resistance to indentation of various grades of rubbers. However, the Shore Durometer hardness test does not serve well as a predictor of other properties such as strength or resistance to scratches, abrasion, or wear, and should not be used alone for product design specifications. Shore hardness is often used as a proxy for flexibility (flexural modulus) for the specification of elastomers. The correlation between Shore hardness and flexibility holds for similar materials, especially within a series of grades from the same product line, but this is an empirical and not a fundamental relationship.

**Procedure:**

* Take Shore A Hardness Tester and calibrate with standards.
* Place the 5-10 mm. thick rubber sheet sample on a hard platform.
* By applying the force in a consistent manner, without shock, press the apparatus by placing the needle of tester on sample and read the Shore A scale.
* Repeat on several points and take the average.

**Result:** The average Shore A Hardness of the given sample of rubber sheet is -------**.**