



HARDNESS COMPARISON TABLE

ENTEC POLYMERS, INC. is not responsible for the accuracy of the data presented in this table. The data is for informational purposes only and should not be used as a basis for any decision. The user should consult the manufacturer's literature for the proper use of the equipment. ENTEC POLYMERS, INC. is not responsible for the accuracy of the data presented in this table. The data is for informational purposes only and should not be used as a basis for any decision. The user should consult the manufacturer's literature for the proper use of the equipment.

Hardness testing is based on the penetration of a specific type of indenter when forced into the material under specified conditions. The hardness is inversely related to the penetration and is dependent on the elastic modulus and viscoelastic characteristics of the material.

The geometry of the indenter and the applied force influence the measurements and therefore no simple relationships exist between the various hardness measurements. Because of this it should be noted that this hardness comparison table is for general comparison only as results can, and do, vary between different types of elastomers and thermoplastics.



Shore A hardness is commonly used on rubbers, elastomers & soft thermoplastics.



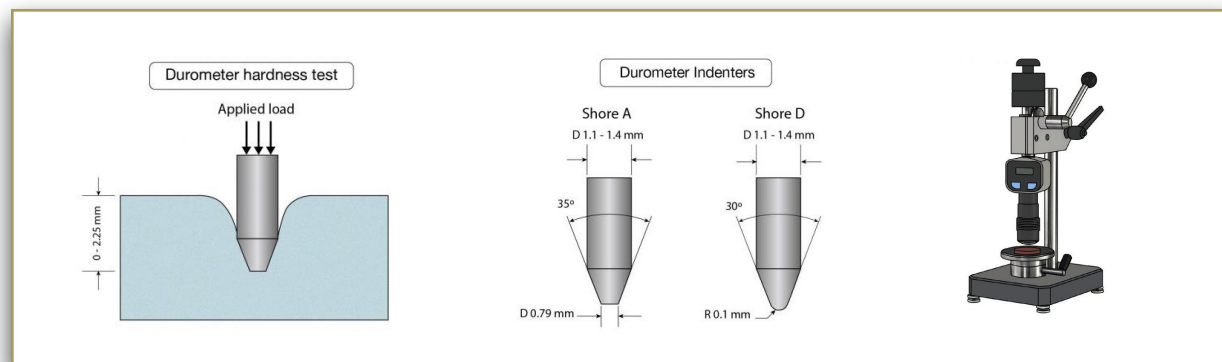
Shore D hardness is commonly used on harder rubbers, elastomers & thermoplastics.



Shore OO is commonly used on very soft, almost gel-like elastomers & foams.



Rockwell R is commonly used on harder thermoplastics & thermoset polymers.



| SHORE A | SHORE D | SHORE OO | ROCKWELL R |
|---------|---------|----------|------------|
| | 110 | | 120 |
| | 99 | | 110 |
| | 88 | | 100 |
| | 77 | | 90 |
| | 73 | | 80 |
| 110 | 66 | | 70 |
| 100 | 58 | | 50 |
| 95 | 46 | | |
| 90 | 39 | | 30 |
| 85 | 33 | | |
| 80 | 29 | 98 | 20 |
| 75 | 25 | 97 | |
| 70 | 22 | 95 | |
| 65 | 19 | 94 | |
| 60 | 16 | 93 | |
| 55 | 14 | 91 | |
| 50 | 12 | 90 | |
| 45 | 10 | 88 | |
| 40 | 8 | 86 | |
| 35 | 7 | 83 | |
| 30 | 6 | 80 | |
| 25 | | 76 | |
| 20 | | 70 | |
| 15 | | 62 | |
| 10 | | 55 | |
| 5 | | 45 | |