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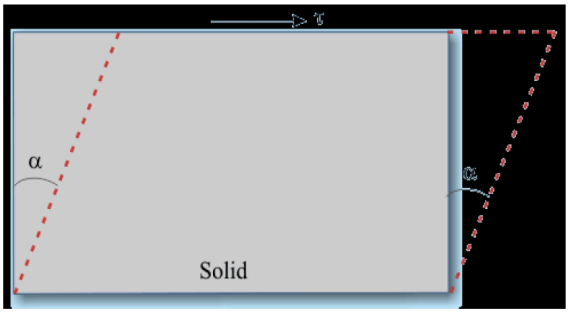
Difference between Solid and Fluid

Solid	Fluid
♣ Solids have more compact structure	♣ Fluids have less compact structure
♣ Attractive Forces between the molecules of solid are larger, therefore more closely packed	♣ Attractive Forces between the molecules of fluid are smaller, therefore more loosely packed
♣ Solids can resist tensile stresses in static condition	♣ Fluids cannot resist tensile stresses in static condition
♣ Solids can resist tangential stresses in static condition	♣ Fluids cannot resist tangential stresses in static condition
 ♣Whenever a solid is subjected to shear stress a. It undergoes a definite deformation α or breaks b. α is proportional to shear stress upto some limiting condition.	♣ Whenever a fluid is subjected to shear stress a. No fixed deformation b. Continuous deformation takes place until the shear stress is applied
♣ In a solid, shear stress is a function of strain	♣ In a fluid, shear stress is a function of strain rate
♣ Solid may regain partly or fully its original shape when the tangential stress is removed	♣ A fluid can never regain its original shape, once it has been distorted by the shear stress
♣ Solid crystals don't form twisted structures, and; solid crystal phases of different compounds don't mix in all proportions	♣ Liquid crystals with three-dimensional order are suggested to be that liquid crystals with optically active molecules form twisted structures and that similar liquid crystal phases of different compounds mix in all proportions

References:
1. http://www.nptel.ac.in
2. https://en.wikipedia.org/wiki/Fluid
3. www.tandfonline.com/doi/pdf/10.1080/00268947808070321