

## Collisions

A COLLISION between particles is any interaction between those particles during which the internal forces are much larger than the net external force acting on that system of particles; therefore, a collision is an event for which the momentum of that system of particles is conserved.

An EXPLOSION is a collision in which the total kinetic energy of the system of particles is greater after the collision than before the collision.

A PERFECTLY ELASTIC collision is one for which the total kinetic energy of the system of particles is unchanged.

An INELASTIC collision is one for which a significant fraction of the total kinetic energy of the system of particles is lost (*i.e.* is converted to other forms).

In a PERFECTLY INELASTIC collision, the amount of kinetic energy lost (*i.e.* is converted to other forms) during the collision is the maximum possible for the given initial conditions; in such a collision, the particles are always stuck together after the collision.