

After completing the gold foil experiment, Rutherford concluded that the size of the nucleus is very small compared to the size of the atom. This is because:

1. One out of every 12000 alpha particles deflected back after hitting the gold foil
2. Most of the alpha particles deflected back after hitting the gold foil
3. Some alpha particles were deflected by small angles
4. Very few of the alpha particles passed through the gold foil

Answer (Detailed Solution Below)

Option 1 : One out of every 12000 alpha particles deflected back after hitting the gold foil