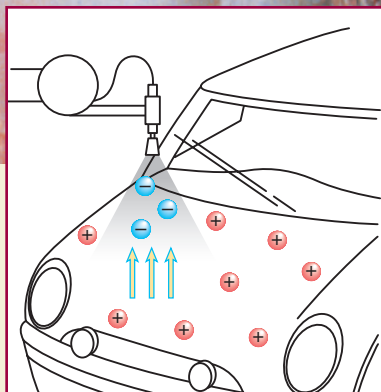


Electric Forces and Fields



In this factory in Bowling Green, Kentucky, a fresh coat of paint is being applied to an automobile by spray guns. With ordinary spray guns, any paint that does not happen to hit the body of the car is wasted. A special type of spray painting, known as *electrostatic spray painting*, utilizes electric force to minimize the amount of paint that is wasted. The paint is given a negative charge and the car is given a positive charge. Thus, the paint is attracted to the car.

WHAT TO EXPECT

In this chapter, you will learn about the basic properties of electric charges. You will learn to calculate the electric force produced by point charges and will learn to interpret electric field lines.

Why it Matters

According to one estimate, electrostatic spray painting saves industries in the United States as much as \$50 million each year. You will study how electric force is used in electrostatic spray painting.

CHAPTER PREVIEW

- 1 Electric Charge**
 - Properties of Electric Charge
 - Transfer of Electric Charge
- 2 Electric Force**
 - Coulomb's Law
- 3 The Electric Field**
 - Electric Field Strength
 - Electric Field Lines
 - Conductors in Electrostatic Equilibrium