



CHEMISTRY AND PLASTICS: Making Canada's Aerospace Industry Take Flight

The aerospace industry is a major part of Canada's economy and without chemistry and plastics, it wouldn't be possible. The industry **creates thousands of jobs** and **brings in billions of dollars each year** by producing **parts** and complete **airplanes, helicopters, and satellites**. Many of these products are sold around the world, helping Canada stay competitive and well-known in high-tech fields. The industry also supports jobs in other areas like research, design, and engineering, making it a key driver of innovation and economic growth in the country.

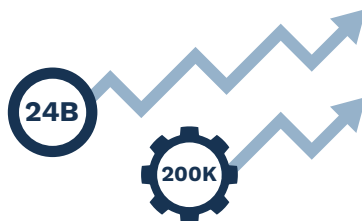
Chemistry and plastics are especially important in building and maintaining modern aircraft. Airplanes and other aircraft need to be strong but lightweight to fly safely while still being fuel efficient. That's where plastics and chemical-based materials come in—they're used to make all parts of aircraft, from the outer body to seats and wiring, because they're tough, heat-resistant, and won't rust. Special coatings and glues, along with de-icing fluids made through chemistry also help keep planes working well in all kinds of weather. Without these materials, aircraft wouldn't be as safe, efficient, or affordable as they are today.



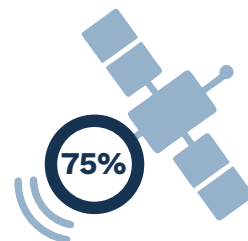
Canadian Aerospace by the numbers



The aerospace industry plays a significant role in the Canadian economy – in fact Canada is currently ranked as the **seventh-largest aerospace industry in the world**. It serves as a high-tech cornerstone of innovation, employment, and international trade.



The industry contributes over **\$24 billion** annually to Canada's GDP and supports more than **200,000** jobs across the country, including in manufacturing, research and development, and supply chain operations.



Canada's aerospace industry is globally competitive, particularly in the production of civil aircraft, engines, flight simulators, and space systems, exporting approximately **75% of its products**. This economic impact extends beyond direct contributions, as the industry drives advancements in engineering, materials science, and robotics, reinforcing Canada's position as a leader in aerospace innovation.

CHEMICALS AND PLASTICS: ENABLING AEROSPACE INNOVATION

PAINTS AND COATINGS

Industrial chemicals contribute to radar-absorbing paints, anti-corrosion coatings, and thermal barrier coatings on engines and external surfaces.

DE-ICING FLUID

In the cold temperatures common in Canada, ethylene glycol is a de-icing fluid that is essential to ensuring planes fly safely in adverse weather conditions.

PERFORMANCE

Advanced chemical adhesives are used in bonding composite structures, replacing traditional fasteners to reduce weight and improve performance.

MECHANICAL

Specialty chemicals are used to formulate high-performance lubricants, essential for reducing friction in engines, gearboxes, and actuators.

SENSOR AND RADAR SYSTEMS

Plastics and dielectrics protect sensitive radar components without signal interference.

LIGHTWEIGHTING

Plastics are used to reduce the overall weight of aircraft and military equipment, thereby improving fuel efficiency and maneuverability.

INTERNAL COMPONENTS

Plastics are molded into seats, overhead compartments, window panes (polycarbonate), and dashboards.

AIRFRAMES

Carbon fiber-reinforced polymers (CFRP) and glass-reinforced plastics are used for airframes, unmanned aerial vehicles (UAVs), and missile casings.

