Beryllium

.... stronger
.... lighter
.... faster
.... reliable

Beryllium

.... a sustainable strategic material
Three forms of beryllium are of strategic importance to the EU:

- Metallic beryllium and alloys containing > 50% beryllium
- Copper beryllium containing 0.25 – 10.0% beryllium
- Beryllium Oxide ceramic

The use of beryllium enables reduced materials consumption, energy savings, a reduced carbon footprint and provides a degree of reliability that cannot be matched by alternative materials: e.g.

- The replacement of bronze aircraft landing gear bearing bushings with lower weight copper beryllium bushings has reduced fuel consumption by 24 billion litres/year, thus reducing carbon dioxide emissions by 61 million tons/year

- The high strength and conductivity of Beryllium alloys that endure over long product life-cycles enable a reduction in the size of electronic devices and longer use, with a consequent reduced consumption of materials.

- Commercial aircraft can be designed with weight saving fly-by-wire electronic control systems, using the reliability that beryllium alloys provide to the 3 million connector terminals found in a modern airliner like the Airbus A380.

- Fire control water sprinkler heads rely upon beryllium alloys to reliably release the water in the event of a fire, over an expected life of a building that can exceed 75 years.

Beryllium and alloys containing beryllium can be recycled indefinitely, with 70% energy savings compared to producing it from ore.

Beryllium is used in the advanced technology industries in which the EU is a world leader, and which provide rewarding employment that is not at risk from low wage developing nation competition.

EU WORLD LEADING INDUSTRIES:

- **Aerospace:**
  - Satellite structures and components
  - Aircraft landing gear, wing and airframe bearings
  - Aircraft electronics and avionics

- **Medical:**
  - X-Ray and CT Scanner x-ray systems
  - Medical isotope production for cancer treatment
  - Analytical devices

- **Energy:**
  - Oil & Gas Exploration and production equipment
  - Mining equipment
  - Alternative energy: Wind Power, Solar, Fusion reactors

- **Defence:**
  - Aircraft and missile navigation and guidance systems
  - Target acquisition and weapon control systems
  - EU member state independent nuclear deterrent systems

- **Science:**
  - Space and terrestrial astronomical telescope mirrors
  - Space probe systems

- **Telecommunications:**
  - Mobile phone infrastructure and systems
  - Mobile phone handsets

- **Consumer Products:**
  - High fidelity audio system loudspeakers
  - PC’s, Netbooks, Tablets
  - Home appliances

Importance of beryllium to the EU:

- **Use in kg / year of beryllium in all forms** 55,000
- **Number of SME that use beryllium** >500
- **Number of larger enterprises using beryllium** >40
- **Total employee numbers** 10,000
- **Of which, this number contact beryllium** 3,000