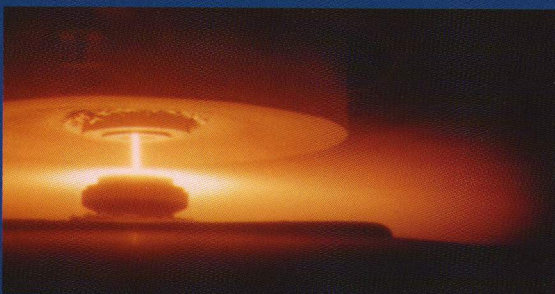




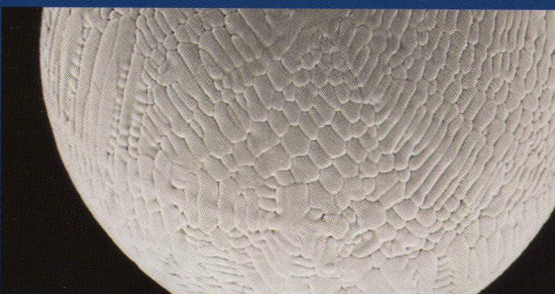
FACILITIES



RSR TECHNOLOGY



PRODUCTS



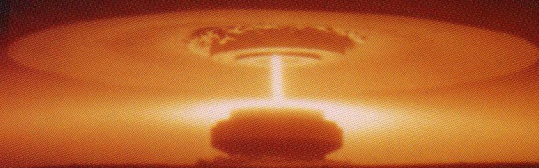
WHO IS ERVIN TECHNOLOGIES?

ERVIN TECHNOLOGIES

develops metal particle concepts
into commercial realities.

ERVIN TECHNOLOGIES

manufactures speciality metal particles
and powders for various industries
and research professionals.



RSR Technology in operation.

**What can
Ervin Technologies
help you develop and
commercialize?**

CURRENT PRODUCTS

Engineered steel and
stainless steel particles

Specialty fine-grained and
amorphous alloys

Advanced magnetic materials

Next-generation electrochemical
electrode powders

Steel inoculants



APPLICATIONS

Rare-earth permanent magnets

Welding/brazing

Hard-facing

Soldering

Thermal sprays

Copying and printing

Hydrogen storage

Advanced batteries

Electromagnetic shielding

Metal injection molding

TECHNICAL CAPABILITIES



Finely-divided metal particle production

Heat treatment; phase annealing,
stress relief, de-carburization,
controlled-oxidation

Precision machining, grinding, sizing,
and finishing of metal particles

Process development

Statistical process control

System design and manufacture

Materials engineering

Atomic absorption and emission
spectroscopy

Particle size analysis

Micro-and macro-hardness measurement

Scanning electron microscopy

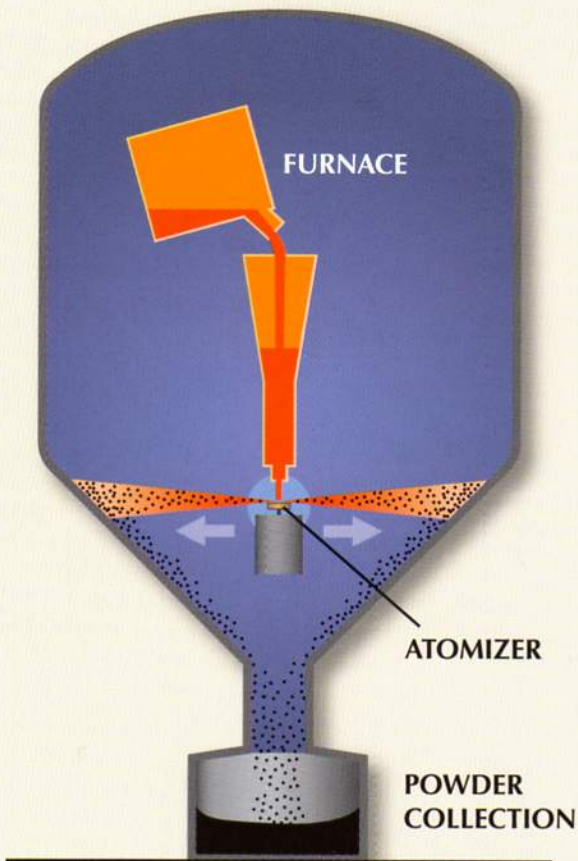
Energy dispersive spectroscopy

Optical light microscopy

Helium pycnometry

RSR TECHNOLOGY

Rapid solidification rate (RSR) technology enables production of fine-grained (nanometer-scale) and amorphous metals with uniform chemistry. These unique microstructures result from very high cooling rates that are unattainable through gas atomization or other methods.



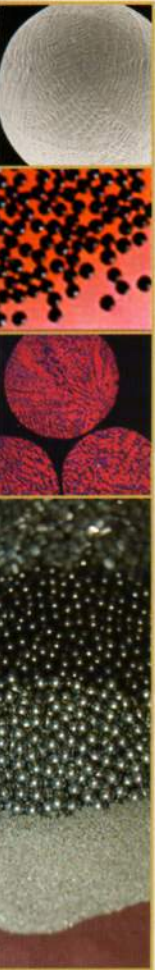
Maximum Temperature = 3000°F

Processing Atmosphere =
air, argon, helium, nitrogen or vacuum

Melt Size = 100-6,000 lbs

PRODUCT CHARACTERISTICS

Ervin Technologies employs several different processing methods, including RSR technology, to produce a wide range of metal particles.



RSR PRODUCTS

Particle sizes ranging from 10 to 1200 μm

Fine-grained or amorphous depending on melt chemistry

Homogenous, high purity chemistry

Primarily spherical atomized shapes

OTHER ERVIN TECHNOLOGIES PRODUCTS

Particle sizes up to 6 mm

Crystalline, pure and alloyed metals

Chemistry controlled/ensured by use of high quality precursors

Spherical and irregular shapes possible