



EPSILON
Vacuum Investment Casting

CompanyProfile

Operating in 4000m2 open and 2400m2 closed area, Epsilon Investment Casting is one of the premier producer of precision investment casting, vacuum investment castings. Epsilon has a proven record of producing world class quality castings and has been certified to produce parts for Aerospace and Military.



Using the most modern machinery, equipment and highly skilled personnel and capability to produce from 1gr to 35kg investment casting parts, Epsilon is pioneered investment casting foundation in Turkey.

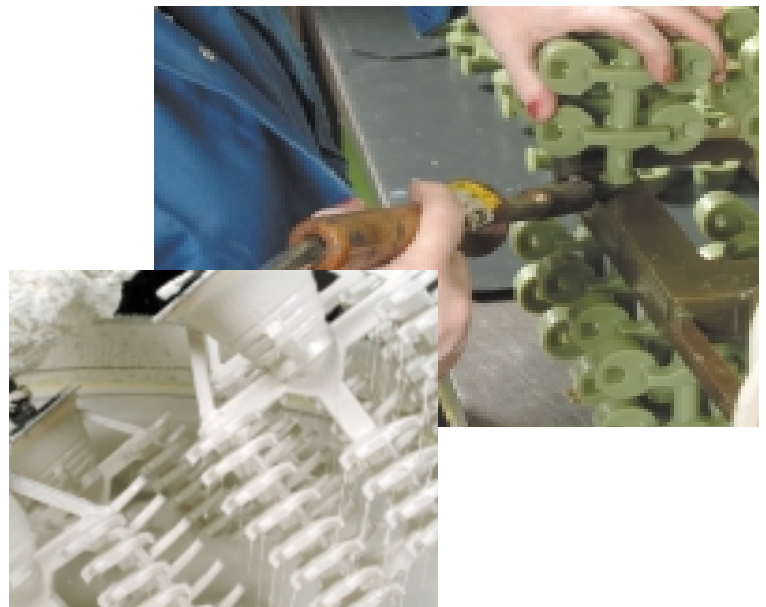
In-House machining capabilities, testing laboratory, world class engineering services allow us to provide our customers one stop shopping.

Our Clientele includes national and international customers. While our national customers are spread all over Turkey, our international markets are located in Germany, Netherlands, Switzerland, UK, Scandinavian countries, USA and the Middle East.

Epsilon Investment Castings has an important place in our rapidly growing economy with improving systematic working practices, utilizing the latest technology, as well as placing great emphasis on customer feedback and environmental respects.

The Process

The **investment casting** process uses a **wax pattern** created from a **precision mould**. This pattern is dipped in ceramic slurry and **coated with ceramic material**. This process is duplicated until a substantial shell is formed. The wax is melted out of the mould leaving a perfect impression which can be filled with your choice of metal. This process has many advantages when creating **small parts**.



Advantages of investment casting

- Reduced number of components.** Investment Castings can reduce the number of parts needed for complex assemblies by integrating several parts into one casting. Traditionally many parts are fixed together by welding, screwing or gluing.
- Eliminate multiple and lengthy machining operations.** Investment castings very often achieve the net shape as cast. If machined from solid, intricate geometries often require several separate machining operations. Components in hard to machine materials like stainless steel are ideal candidates for casting.
- Avoid expensive tooling.** Investment castings can be produced to complex shapes and detail with low cost tooling. Machining of complex parts often requires expensive jig and fixture arrangements.
- Avoid waste material.** Investment castings eliminate the waste of material inherent in machining processes. For complex geometries and where exotic materials are required, the casting process is very cost effective.

Vacuum Investment Casting

Vacuum investment casting was originally developed for processing of special and exotic alloys and is consequently becoming more commonplace as these advanced materials are increasingly employed. It is developed for materials such as super alloys, etc.

As the name suggests, the process involves melting of a metal under vacuum conditions. Electromagnetic induction is used as the energy source for melting the metal.

Induction melting works by inducing electrical eddy currents in the metal. The source is the induction coil which carries an alternating current. The eddy currents heat and eventually melt the charge.

The furnace consists of an air-tight water-cooled steel jacket, capable of withstanding the required vacuum for processing. The Metal is melted in a crucible housed in a water-cooled induction coil and the furnace is typically lined with suitable refractory material.

The molten metal may be poured/cast either under vacuum or inert gas environments.



Metals and alloys that have a high affinity for gases, in particular nitrogen and oxygen are often melted/refined in vacuum induction furnaces to prevent contamination/reaction with these gases. Thus, the process is generally used for processing of high purity materials or materials with tight tolerances on chemical composition.

Tooling

We use low cost **aluminium**, **resin** or **rubber** tooling to suit application. The correct tooling for your product will be selected by our experienced engineers.

Lead times

Our investment casting lead times are the lowest in the industry at **2-5 weeks**.
Emergency supplies can be even quicker, as little as **7 days** for small quantities.

Customer Assistance

Request a Quote: Easily get a FREE Epsilon Castings quote estimate at sales@epsilonvac.com

Ask the steel investment casting expert: Precision castings experts are part of Epsilon's customer assistance

Please email us at info@epsilonvac.com for you questions regarding investment castings.

Let us help you today!

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TheMetals



Nimocast alloys
Inconel alloys
Mar-M range
Stellites
VMA range
Vac melted 17-4PH
And many others....



The process is applicable to a wide range of materials including **stainless steel**, **carbon steel**, **cast iron**, **nickel alloys**, **cobalt alloys**, **bronze**, **brass** and **aluminium**.
If the material you require is not on this list please [contact us](#) to find out if it is compatible with the investment casting process.



For More Information: info@epsilonvac.com



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Vacuum Investment Casting

PART OF THE DELTAMET GROUP



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