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Global Mini Arc Melting Furnace Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global Mini Arc Melting Furnace market size is expected to reach $ 81.74 million by 2032, rising at a market growth of 6.2% CAGR during the forecast period (2026-2032).

In 2025, global Mini Arc Melting Furnace production reached approximately 860 units with an average price of USD $60,000 per unit. The product is a compact laboratory capital instrument used to melt and homogenize gram-scale or small-batch metallic charges under vacuum or high-purity inert gas. It occupies the sample-preparation stage of the advanced-materials value chain, linking elemental feedstock with alloy characterization, casting trials, and subsequent heat treatment or testing. Commercial formats range from low-cost quartz-chamber benchtop units to stainless-steel high-vacuum systems with multiple hearth cavities, manipulators, suction casting, automated electrode motion, or glovebox integration. Unlike industrial electric arc furnaces and vacuum arc remelting equipment, these systems prioritize flexibility, low material consumption, contamination control, and rapid composition screening rather than throughput. They also differ from standalone arc power supplies, induction melters, and plasma furnaces because the target product is a complete integrated research system. The category warrants independent study due to its specialized supplier base, broad price dispersion, long replacement cycle, and direct exposure to advanced-alloy research investment.

Mini Arc Melting Furnaces occupy a narrow but strategically useful position between improvised laboratory arc setups and larger vacuum melting platforms. Their value lies in enabling researchers to prepare small, composition-controlled alloy buttons or cast specimens without committing to pilot-scale equipment, large raw-material charges, or ceramic crucibles. The category therefore serves as a dedicated research instrument rather than a simplified version of an industrial electric arc furnace. Its market identity is

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defined by compact charge capacity, controlled vacuum or inert atmosphere, water-cooled copper hearths, non-consumable electrodes, and optional casting functions. 2) Demand is expected to expand steadily as advanced alloy programs become more iterative and data-driven. High-entropy alloys, refractory alloys, metallic glasses, functional intermetallics, superconducting compositions, and reactive-metal systems all require repeated preparation of small batches before scale-up. This favors equipment that reduces material consumption, shortens alloy-screening cycles, and supports rapid remelting or sample flipping. Growth should remain stronger than that of conventional laboratory furnaces, but below the pace of the hottest materials segments because purchases are capital-equipment decisions and installed systems can remain in service for many years. 3) The current supply structure combines established European, North American, Japanese, Korean, and Chinese manufacturers with a smaller group of custom vacuum-equipment specialists. Entry-level quartz-chamber systems emphasize affordability and glovebox compatibility, while mid-range stainless-steel systems add higher vacuum, multiple hearth cavities, manipulators, and suction casting. Premium systems differentiate through automated electrode motion, programmable current control, integrated casting, data logging, higher cleanliness, and customized glovebox or pilot-line integration. This creates a broad price spread and prevents a single specification from representing the whole market. 4) The main growth drivers are the rising number of advanced-materials laboratories, greater use of combinatorial alloy development, increased interest in domestic materials capability, and the need to process expensive or oxygen-sensitive elements in very small quantities. Product upgrades will increasingly focus on repeatability rather than merely maximum temperature. Better atmosphere control, contamination reduction, operator protection, automated flipping, multi-cavity hearths, and digital recipe management can raise equipment utilization and make results more transferable between laboratories. Suction casting and rapid-solidification options also broaden the instrument from simple button melting to specimen preparation. 5) The category remains a specialist capital-equipment market with moderate concentration at the high end and more fragmented competition at the value end. Buyers usually prioritize application fit, vacuum quality, service access, and casting configuration over headline chamber size alone. Manufacturers that can offer modular systems, reliable after-sales support, validated processing of reactive alloys, and upgrade paths toward automation are likely to defend stronger pricing. For market research, Mini Arc Melting Furnaces merit separate treatment from industrial arc furnaces, vacuum arc remelting systems, induction melters, and standalone power supplies because their customers, purchase cycles, unit economics, and technical decision criteria are materially different.

This report studies the global Mini Arc Melting Furnace production, demand, key

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manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for Mini Arc Melting Furnace and provides market size (US$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of Mini Arc Melting Furnace that contribute to its increasing demand across many markets.

Highlights and key features of the study
Global Mini Arc Melting Furnace total production and demand, 2021-2032, (Units)
Global Mini Arc Melting Furnace total production value, 2021-2032, (USD Million)
Global Mini Arc Melting Furnace production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (Units), (based on production site)
Global Mini Arc Melting Furnace consumption by region & country, CAGR, 2021-2032 & (Units)
U.S. VS China: Mini Arc Melting Furnace domestic production, consumption, key domestic manufacturers and share
Global Mini Arc Melting Furnace production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (Units)
Global Mini Arc Melting Furnace production by Melting Charge, production, value, CAGR, 2021-2032, (USD Million) & (Units)
Global Mini Arc Melting Furnace production by Application, production, value, CAGR, 2021-2032, (USD Million) & (Units)

This report profiles key players in the global Mini Arc Melting Furnace market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Mitsubishi Kakoki Kaisha, Ltd., Centorr Vacuum Industries, Materials Research Furnaces LLC, Edmund Buehler GmbH, Arcast Inc., Thermal Technology LLC, Nissin Giken Co., Ltd., AMAZEMET Sp. z o.o., ShinMaywa Industries, Ltd. (DIAVAC Limited), Makabe R&D Co., Ltd., etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World Mini Arc Melting Furnace market

Detailed Segmentation:

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Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (Units) and average price (US$/Unit) by manufacturer, by Melting Charge, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

Global Mini Arc Melting Furnace Market, By Region:

- United States
- China
- Europe
- Japan
- South Korea
- ASEAN
- India
- Rest of World

Global Mini Arc Melting Furnace Market, Segmentation by Melting Charge:

- Up to 20g
- Above 20g to 100g
- Above 100g to 500g
- Above 500g

Global Mini Arc Melting Furnace Market, Segmentation by Casting Integration:

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Melting Only

Integrated Suction Casting

Integrated Tilt Casting

Multi-Process Integration

Others

Global Mini Arc Melting Furnace Market, Segmentation by Chamber Integration Form:

Standalone Chamber System

Glovebox-Compatible Module

Glovebox-Integrated System

Customized Floor System

Others

Global Mini Arc Melting Furnace Market, Segmentation by Application:

High-Entropy Alloy Synthesis

Refractory Alloy Development

Metallic Glass Preparation

Others

Companies Profiled:

Mitsubishi Kakoki Kaisha, Ltd.

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Centorr Vacuum Industries

Materials Research Furnaces LLC

Edmund Buehler GmbH

Arcast Inc.

Thermal Technology LLC

Nissin Giken Co., Ltd.

AMAZEMET Sp. z o.o.

ShinMaywa Industries, Ltd. (DIAVAC Limited)

Makabe R&D Co., Ltd.

Shenyang Kejing Auto-instrument Co., Ltd.

Zhengzhou CY Scientific Instrument Co., Ltd.

Chinese Academy of Sciences Shenyang Scientific Instruments Co., Ltd.

Attotec Co., Ltd.

Hefei Kejing Materials Technology Co., Ltd.

MTI Corporation

Key Questions Answered:
1. How big is the global Mini Arc Melting Furnace market?
2. What is the demand of the global Mini Arc Melting Furnace market?
3. What is the year over year growth of the global Mini Arc Melting Furnace market?
4. What is the production and production value of the global Mini Arc Melting Furnace market?
5. Who are the key producers in the global Mini Arc Melting Furnace market?
6. What are the growth factors driving the market demand?

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