# Dossier: MRL MATERIALS RESOURCES LLC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,249,273.00

**Award Date:** 2023-09-07

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

MRL Materials Resources LLC, based in Newport News, Virginia, specializes in the development, manufacturing, and commercialization of advanced materials, particularly lightweight, high-strength, and corrosion-resistant alloys for defense and aerospace applications. Their core mission appears to be to provide innovative material solutions that improve the performance, durability, and safety of critical components in extreme environments. MRL aims to solve the challenges of weight reduction, enhanced strength, and corrosion protection, which are critical for advanced aircraft, missiles, and naval systems. Their unique value proposition lies in their focus on creating and tailoring these advanced materials to specific customer needs, offering custom alloy development, casting, forging, and machining services.

**Technology Focus:**

* High-strength aluminum alloys: Development and production of advanced aluminum alloys with improved strength-to-weight ratios and corrosion resistance compared to traditional alloys (e.g., Aluminum-Scandium alloys). They focus on optimized processing parameters for these alloys.
* Specialty metal castings and forgings: Production of precision castings and forgings from aluminum, magnesium, and titanium alloys, tailored to specific customer designs and performance requirements, especially for complex geometries used in aerospace.

**Recent Developments & Traction:**

* In September 2020, MRL secured a Small Business Innovation Research (SBIR) Phase I award from the Department of Defense for the development of improved aluminum alloys for hypersonics applications.
* In 2022, MRL was awarded a follow-on SBIR Phase II award to scale up the research and development effort from Phase I.
* MRL continues to promote their capabilities in additive manufacturing compatible materials, specifically highlighting aluminum alloy powders for laser powder bed fusion (LPBF).

**Leadership & Team:**

While specific names of the CEO and other key leadership personnel are difficult to confirm, MRL actively recruits experienced materials scientists and engineers, often with backgrounds in metallurgy, aerospace engineering, or materials science. Job postings emphasize the need for experience in alloy development, casting, and forging processes.

**Competitive Landscape:**

* Constellium: Constellium is a major player in advanced aluminum products and solutions, serving a broad range of industries, including aerospace. MRL's differentiator is its smaller size, allowing for more agile and customized materials solutions specifically tailored to niche applications and DoD/government programs.
* Arconic: Arconic is another major competitor producing advanced alloys and engineered products. MRL's focus on small-batch, specialized alloys and custom solutions, particularly via SBIR programs, differentiates it from Arconic's broader, higher-volume production.

**Sources:**

* [https://www.sbir.gov/sbirsearch/detail/2005877](https://www.sbir.gov/sbirsearch/detail/2005877)
* [https://www.linkedin.com/company/mrl-materials-resources-llc/](https://www.linkedin.com/company/mrl-materials-resources-llc/)
* [https://www.indeed.com/cmp/Mrl-Materials-Resources-LLC](https://www.indeed.com/cmp/Mrl-Materials-Resources-LLC)