

Hardai ARMND

(Brochure)

Products and services inspired from
Made in India Nanotechnology

WE OFFER



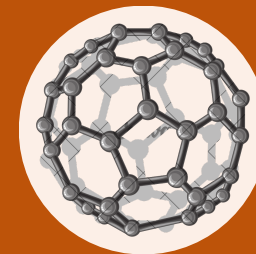
Products manufacturing based on nanomaterials like nano-lubricants and nano-sensors.



Smart and customized machine design and manufacturing services.



A complete package of robotics and automation solutions of manufacturing and process industries.





Engineering Solutions

We are pioneers, driven by a mission and vision to significantly reduce lubricant wastage. This ambitious goal is being pursued through the innovative deployment in nanotechnology and smart machines.



Combination of Science and technology on a single platform.



Cost-reduction strategies with improved quality



Long-term support and warranty on the product & services.

About Us

At Hardai ARMND Engineering Solutions, we believe that innovation and technology should be accessible to all, not the exclusive domain of a few. We strive to be the key that unlocks these doors for industrialists, offering a rapid understanding of their needs and even faster solutions.

Our wise words

We focus on long-term relations, and that is achieved by trust. Trust can only be achieved by flawless coordination (technical as well as humanitarian) and by delivering high-end solutions to the existing problem statements.



HAES Brochure



Director

Mr. Devesh Upadhyay
M.tech Mechanical engineering
SRM UNIVERSITY
INDIA

Our expertise lies in bridging the gap between challenges and innovative solutions, making technology a powerful tool for all. Hardai ARMND is well equipped with resources such as versatility of scientists and engineers in trades of material science, fluid power technology, tribology science and technology, harmonics and vibrations technology, Strutural designers and well connected manufacturing partners from all over India. All these combinations of resources can be seen in Hardai ARMND Engineering Solutions.

Our Values

Hardai ARMND, a leading provider of industrial lubricants, has harnessed the power of MoS₂ to create a game-changing solution for your industry. With MoS₂ Dry Lubricant, you can unlock new levels of efficiency, reliability, and sustainability. Embrace this groundbreaking advancement and elevate your operations to new heights.

" Embrace the future of lubrication with Molybdenum Disulfide (MoS₂) Dry Lubricant by Hardai ARMND.

Experience the transformative power of this groundbreaking innovation and unlock the limitless potential of your industrial operations "

Contact Us



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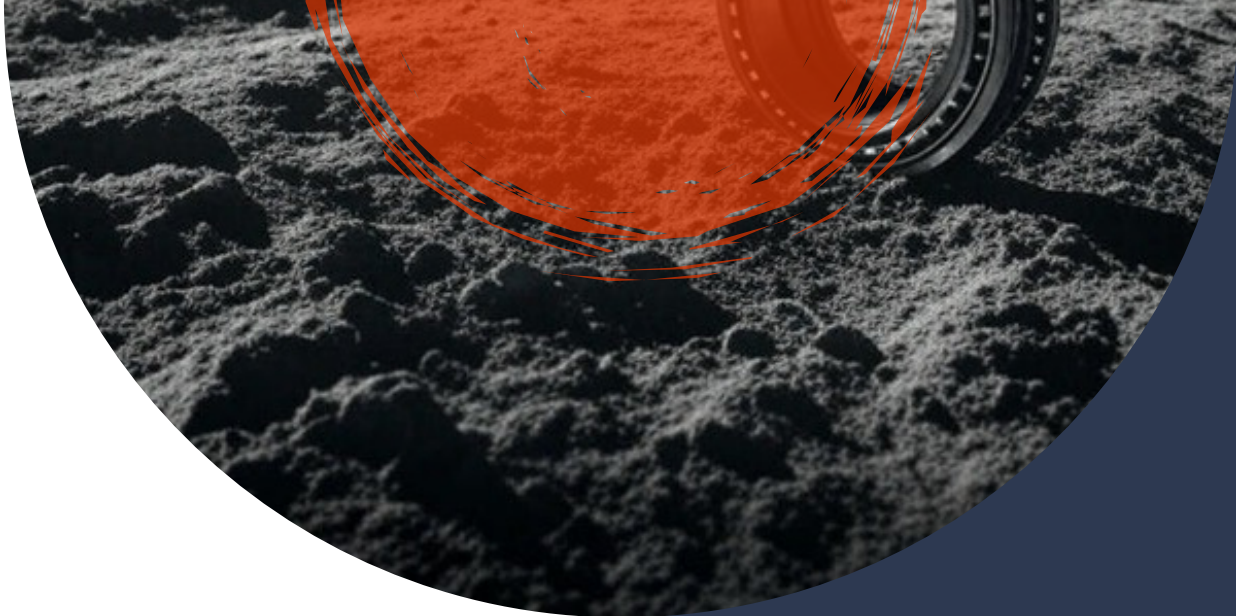


Founder

Mrs. Malti Sharma

Hardai ARMND Engineering Solutions Since 2021

Our mission is to optimize industrial processes, reduce waste, and conserve resources for a sustainable future. We strive to create innovative solutions that minimize environmental impact and maximize efficiency. By fostering a culture of sustainability, we aim to empower industries to thrive while preserving our planet. Our vision is to be a leading force in sustainable industrial practices, driving a global shift towards responsible resource utilization and a cleaner, greener tomorrow.



Invention of secondary lubrication

The genesis of a groundbreaking innovation traces back to 2014 when the distinguished scientist Dr. Ramphal Sharma embarked on a journey to revolutionize battery technology by pioneering a hydrothermal soft chemical route process for synthesizing Molybdenum Disulfide (MoS₂) in long-life batteries. As his exploration progressed, Dr. Sharma discerned a critical issue plaguing automobile batteries—mechanical losses stemming from inadequate lubrication efficiency. These losses predominantly manifested in tribological components such as engines and drivetrains, affecting key elements like bearings, gears, engine pistons, mechanical joints, and drive shafts.

Amidst the challenges posed by the COVID-19 pandemic, Dr. Sharma conducted a pivotal experiment involving MoS₂ coating using the hydrothermal soft chemical route process on a **61906 bearing** rated for 30,000 RPM. Astonishingly, post-coating, the bearing exhibited robust health even after enduring **40,000 RPM** continuously for two hours, reaching temperatures within human tolerance limits. Collaborating closely with his son, Er. Devesh Upadhyay, the prime design and testing engineer, Dr. Sharma solidified his vision, culminating in the establishment of Hardai ARMND Engineering Solutions in March 2021, under the sole proprietorship of Mrs. Malti Ramphal Sharma, a pivotal figure in consolidating the interdisciplinary science and technology team. With rigorous research and development, the team unearthed a vital correlation: the finer the particle size of MoS₂, the greater the efficiency of the MoS₂ solid lubricant.

In 2022, a breakthrough ensued with the development of cost-effective Made in India 10-nanometer particle size MoS₂ solid lubricant compound, adaptable for deployment across three lubricant variants: solid lubricant coating, solid lubricant grease additive, and solid lubricant engine oil and gear oil additive, all powered by nano-technology. Thus, the team birthed a familial line—the KUL (Family) of Molybdenum (MOLY), branded as MOLYKUL—the epitome of the MoS₂ lubricant realm.

HAES Story

Backbone of HAES



Chief Scientific Officer

Dr. Ramphal Sharma
Ph.D in Science

Scientist world rank in 2%

Physics, Material science and Nanotechnology

Hardai ARMND is well equipped with resources such as versatility of scientists and engineers in trades of material science, fluid power technology, tribology science and technology, harmonics and vibrations technology, Structural designers and well connected manufacturing partners from all over India.



Automation Expert

Ashwini sharma
B.Tech Electrical & Electronics
SRM University



Digital marketing Head

Nisha Upadhyay
B.Tech Computer Science
RCW Jaipur



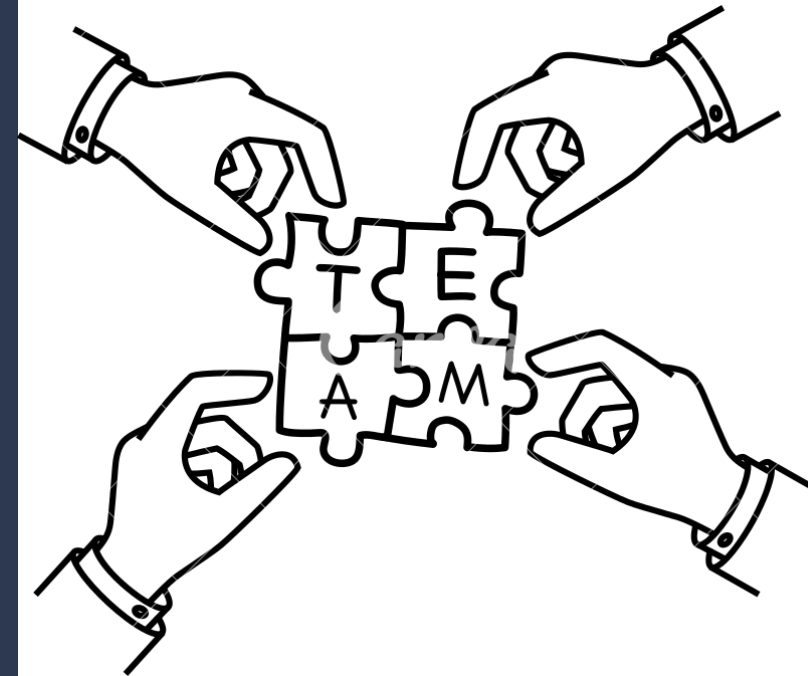
Project Manager

Mr. Veer Singh
12+ years in high tech projects



Public relation expert

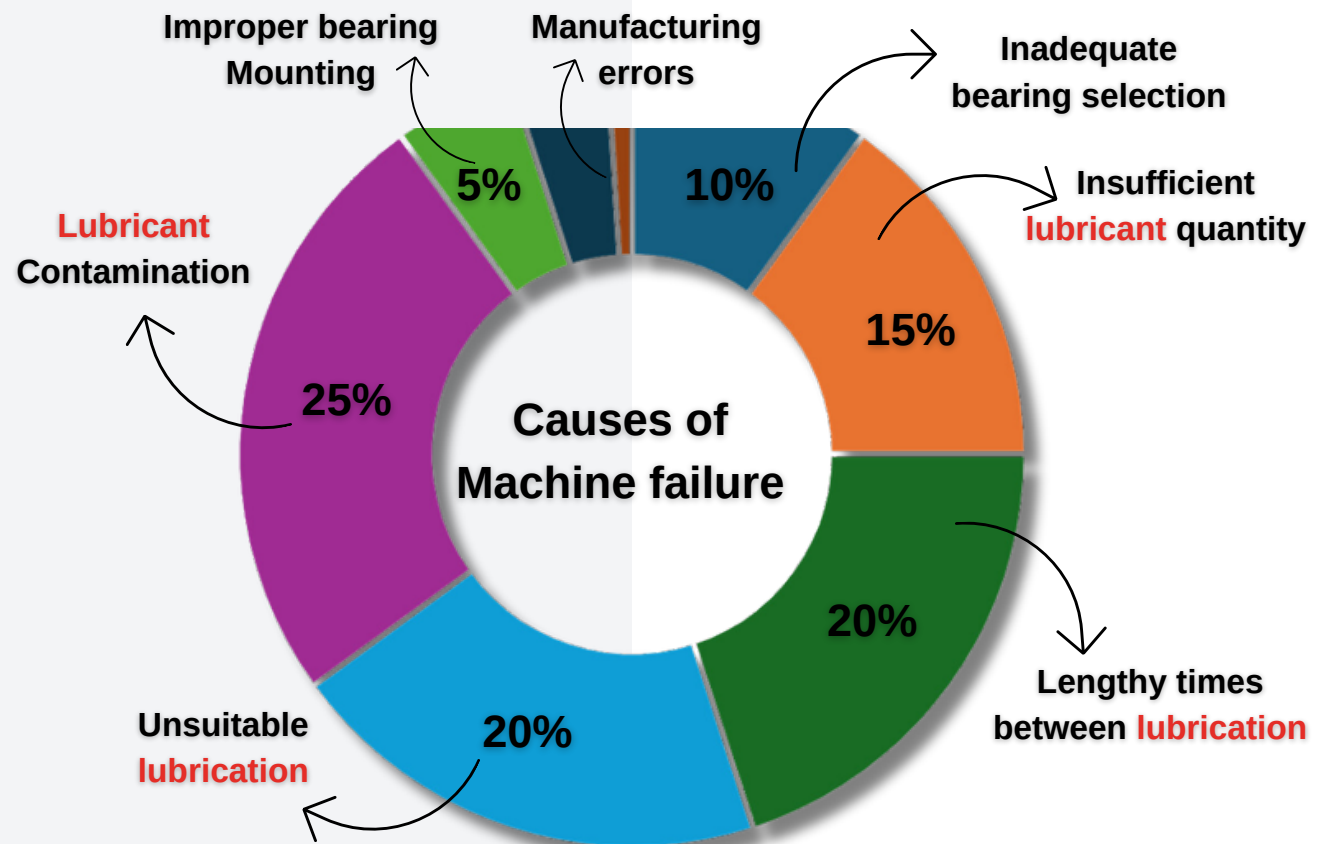
Mr. Neetesh Goswami
B.Tech Information Technology
10+ Years in public relations



HAES Team

What are we solving?

Hardai ARMND Engineering Solutions' branding of MolyKul, a solid lubricant product brand infused with MoS₂ and nano-technology, signifies a transformative approach to reducing maintenance costs. By leveraging the properties of MoS₂, known for its low friction and wear resistance, coupled with nano-technology enhancements, MolyKul extends maintenance intervals significantly. This innovation ensures that machinery and equipment operate smoothly for longer durations without the need for frequent maintenance, thus diminishing downtime and costly repairs. Consequently, the utilization of MolyKul not only enhances lubricant performance but also effectively curtails the high expenses associated with maintenance.



MoS₂ Coating mass production in India

MoS₂, chemical name for Molybdenum Disulfide, is a solid lubricant known for its exceptional friction-reducing properties. When applied as a dry film coating, MoS₂ forms a durable layer on surfaces, providing smooth lubrication without the need for traditional liquid lubricants. This innovative coating technology has become a game-changer across various industries.



- **MoS₂ Technology:** Molybdenum disulfide (MoS₂) offers exceptional anti-friction properties, reducing wear and extending component lifespan.
- **Dry Film Application:** MolyKul Coat applies as a dry film, eliminating the mess and environmental concerns associated with liquid lubricants.
- **Enhanced Performance:** By reducing friction, MolyKul Coat enhances machinery performance and efficiency, optimizing operational output.
- **Longevity and Durability:** The durable nature of MoS₂ ensures long-lasting lubrication, reducing the frequency of maintenance and downtime.



MolyKul Mono-Coat



MoS2 Nano-lubricated Bearings

MolyKul Spin bearings leverage the power of Molybdenum Disulfide Dry Lubrication Coating technology and specialized additives. MoS₂'s exceptional lubricating properties significantly reduce friction and wear, forming a protective layer on bearing surfaces that prevents metal-to-metal contact.

- Reduced Energy Consumption: Minimize energy usage and lower operational costs.
- Lowered Heat Generation: Reduce thermal stress on bearings, enhancing their durability.
- Noise and Vibration Reduction: Create smoother, quieter operations.
- Enhanced Corrosion Resistance: Protect bearings from harsh environments, extending their lifespan.

By incorporating MolyKul Spin into your operations, you can expect a minimum of 15% reduction in energy consumption for electric motors alone. Elevate your industrial and aerospace applications with MolyKul Spin, the future of bearing technology.



MolyKul Spin





MoS2 automotive oil additive

Transform your vehicle's performance with Hardai MolyKul Active Oil Auto-Spec, a cutting-edge MoS2 Moly Engine Oil Additive engineered to combat engine friction and enhance efficiency. Powered by advanced 2D Mono Layer Molybdenum Disulfide (MoS2) technology, this Made in India brand delivers unparalleled motor protect benefits, making it the ideal choice for automobile engines



- Fills Micro-Scratches: Nano MoS2 Moly anti-friction particles penetrate and smooth out micro-scratches on engine surfaces, reducing wear and extending engine life.
- Reduces Engine Friction: Forms a low-friction, high-load lubricating film, minimizing metal-to-metal contact for a smoother, quieter ride.
- Boosts Fuel Efficiency: Lower engine friction translates to less energy waste, improving mileage and reducing fuel costs.
- Enhances Engine Thermal Management: Keeps hot engine problems at bay by dissipating heat caused by friction, ensuring optimal performance even in extreme conditions.
- Protects During Cold Starts: Maintains oil viscosity and provides instant lubrication, safeguarding components when lubricating oil circulation is slow.
- Universal Compatibility: It seamlessly mixes with all motor oil, car oil, and bike oil types—synthetic, semi-synthetic, or mineral—for versatile use in oil car engine applications.



molykul.com



MolyKul Oil Additives



MoS2 anti-seize grease

MolyKul Grease Indus-spec, a leading MoS2 anti-seize grease by Hardai ARMND, is engineered for aerospace and heavy-duty applications. Powered by molybdenum disulfide (MoS2), this high-temperature grease delivers MoS2 anti-seize grease benefits like low friction, corrosion resistance, and seizure prevention for bolts, bearings, gears, and pipe threads.

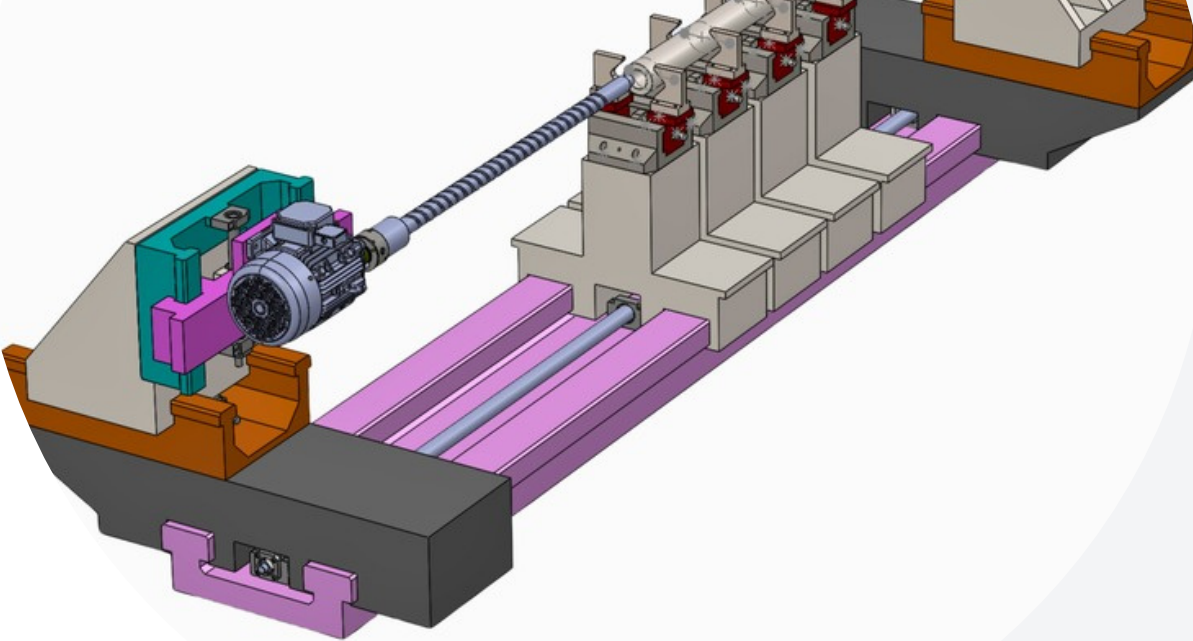
As a top MoS2 grease manufacturer in India, Hardai ARMND's MolyKul Grease offers cost-effective MoS2 grease solutions that reduce maintenance costs with MoS2, prevent downtime with MoS2 grease, and enhance equipment longevity. Ideal for industrial MoS2 grease applications, it ensures maintenance efficiency, industrial reliability, and downtime savings in high-pressure and extreme environments. Choose Hardai ARMND for anti-seize grease for cost efficiency and industrial savings.



molykul.com

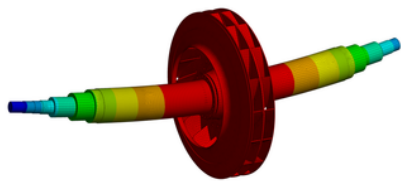


MolyKul Grease



Customized smart machines Design & Manufacturing

Special Purpose Machines (SPM) are customized machines designed for specific manufacturing tasks, offering tailored solutions to meet unique industry requirements. These machines excel in enhancing automation, improving quality, and streamlining production workflows.



- Machine Design
- Design Simulation
- Machine Prototyping
- Machine system integration
- Precision Assembly
- Manufacturing

Unlike standard, off-the-shelf machines, SPMs are engineered to perform specialized operations with high efficiency and effectiveness. This customization optimizes production workflows, enhances productivity, and addresses unique manufacturing challenges that standard machines cannot handle. SPMs can incorporate a variety of technologies, including CNC machining, additive manufacturing, robotics, and automation, to achieve their specialized functions. They play a crucial role in streamlining manufacturing processes and improving overall production output.



HAES Special Purpose Machines

Major Clients collaborations with HAES products and Services

Hardai ARMND Engineering Solutions is at the forefront of India's industrial advancement, driven by a commitment to pioneering 'Made in India' products and services. Their collaboration with major industry players is a testament to their dedication to highest quality standards, resulting in solutions that are both robust and reliable. By consistently delivering excellence and meeting the demanding requirements of industry leaders, Hardai ARMND Engineering Solutions has successfully achieved and helped its partners achieve significant milestones. This commitment to domestic manufacturing, innovation, and quality not only solidifies their position as a key engineering provider but also directly contributes to India's sustainable development goals by fostering self-reliance, enhancing industrial capability, and driving economic growth.



HAES Clients collaborations

Hardai ARMND

Contact

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