GRAPSYS

"Where High Thermal Conductivity with low/zero electrical conductivity"

Company Overview: Introduction, Vision, and Mission

GrapSys is an innovation-led startup from Konnagar, West Bengal, developing a handmade, energy-free thermal paste for electronics and industrial systems. Our product offers high thermal conductivity with low electrical conductivity, providing a safer, more stable alternative to imported thermal pastes—especially for aluminum-based systems.

With a zero-energy, machine-free production process, we enable rural women-led micro-units, aligning with the Make in India mission. GrapSys isn't just a product—it's a scalable, socially-driven solution aiming to reduce imports and take Indian innovation global.

VISION

To make India a global leader in handmade, export-quality thermal interface materials.

MISSION

Empowering rural women through energy-free manufacturing of world-class thermal pastes under Make in India.

Market Challenges and Barriers

Limited Domestic Alternatives

India lacks locally-made, non-reactive thermal pastes compatible with high-performance processors and aluminum systems.

100% of high-performance thermal paste is imported, raising costs and supply dependency.

Source : electronicsforyou.biz

Energy & Equipment Dependency

Conventional thermal paste manufacturing requires energy-intensive machinery and precise lab conditions, making rural production impossible.

90% of manufacturers use machine-based processes, limiting decentralization and increasing overhead.

Source : marketsandmarkets.com

Rural Employment Gaps

Lack of skilled jobs in rural areas, especially for women, limits inclusive economic participation.

Over 70% of rural Indian women remain outside formal workforce due to lack of local options.

Source : ilo.org

GrapSys addresses import dependency, energy-intensive manufacturing, and rural job gaps through a handmade, export-grade innovation model.

Our Innovative Solutions

Energy-Free Thermal Paste Manufacturing
Handmade production process that requires no electricity or machines, making it ideal for rural deployment.

Non-Reactive, High-Performance Formulation
Safe for all metals including aluminum alloys, with high thermal conductivity and zero corrosive behavior.

Rural Cluster Employment Model
Empowers rural women through decentralized production units, promoting self-employment and inclusive growth under Make in India.

Global Export-Ready Product Strategy
Targeting global processor, GPU, and electronics markets through B2B and e-commerce platforms with certification and branding focus.

GRAPSYS TECHNOLOGIES

We deliver eco-friendly, handmade thermal solutions that empower local communities, replace imports, and serve global industries with safe, high-performance products.

Our Unique Strengths

At GRAPSYS TECHNOLOGIES, we blend material innovation, grassroots empowerment, and global standards to deliver thermal solutions that redefine performance and sustainability.

Handmade, Energy-Free Manufacturing

Zero electricity or machinery needed—ideal for rural deployment, cost-efficiency, and sustainable production.

Non-Reactive, High-Conductivity Formula

Safe for all metals including aluminum; stable performance across wide temperature ranges.

Rural Women Empowerment Model

Decentralized production clusters enable employment, skill-building, and entrepreneurship at the grassroots.

Global Export Potential

Positioned for international markets with a unique India-made alternative to high-cost imported thermal pastes.

Our unique strengths allow GrapSys to combine innovation, impact, and technical excellence setting new benchmarks in the thermal materials industry.

Focused Target Market

Our target market includes global electronics and industrial device makers seeking safe, efficient, and sustainable thermal interface solutions.

Segmentation

- **Industry:** Electronics, Computer Hardware, Robotics, CNC Machines, Automotive, and Industrial Equipment.
- **Geography:** Primarily India, with export focus on USA, Germany, and East Asia.
- **Demographics:** B2B tech manufacturers, repair service providers, and OEM brands needing high-performance thermal paste.

Targeting

Focus on manufacturers of CPUs, GPUs, microcontrollers, and industrial electronics seeking non-reactive, energy-free, and high-conductivity thermal solutions.

Positioning

GRAPSYS TECHNOLOGIES stands as a bold, Make in India innovator, delivering export-grade, handmade thermal materials that blend technical performance with rural empowerment and sustainability.

Aiming for Scalable Growth and Market Leadership

LONG TERM GOALS

- **Global Market Penetration:**
  - *Enter high-demand international markets such as the USA, Germany, and Japan.*
  - *Collaborate with global electronics and hardware manufacturers for OEM partnerships.*
- **R&D and Product Expansion:**
  - Build in-house lab for continuous innovation in thermal conductivity performance.
  - Develop new variants for automotive, industrial, and consumer electronics applications.

SHORT TERM GOALS

- **Production Capacity Building:**
  - *Set up decentralized micro-manufacturing clusters in rural areas for scalable handmade production.*
  - *Train rural women to meet growing demand and ensure consistent quality output.*
- **Digital Presence & B2B Sales:**
  - *Launch branded e-commerce platform and list on Amazon, Flipkart, and Alibaba.*
  - *Begin outreach to OEMs via email, expos, and government-industry meetups.*

Our goal is to scale responsibly by building sustainable production capacity, growing globally, and innovating to lead the thermal interface materials market.

Competitive Landscape and Our Unique Advantage

Alternative Solutions

Companies like Thermal Grizzly, Arctic, and Noctua dominate the global thermal paste market with machine-made, energy-intensive products. These solutions often lack compatibility with aluminum alloys and are expensive for developing markets. Most options are imported and inaccessible to small-scale users.

Problems with Alternatives

Thermal Grizzly and Conductonaut offer excellent thermal conductivity, but are unsafe for aluminum and require careful application.
Arctic and Noctua are more affordable but offer lower conductivity.
All major players rely on machine-driven manufacturing, making rural or decentralized production impossible and limiting local job creation.

Our Edge

- ***Handmade, Energy-Free Innovation:*** *No machinery or power needed; ideal for rural cluster-based manufacturing.*
- ***Safe for All Metals:*** *Non-reactive with aluminum, unlike liquid metal pastes.*
- ***Inclusive & Scalable:*** *Empowers rural women through low-skill, high-impact production units.*
- ***Cost-Effective & High Performance:*** *Matches or exceeds imported quality at competitive pricing.*

Market Opportunities

The demand for thermal interface materials (TIMs) is rapidly rising due to global growth in electronics, processors, GPUs, and industrial automation. GrapSys addresses a niche yet essential segment with its handmade, non-reactive, energy-free thermal paste, aligning with both performance and sustainability needs.

The global thermal interface materials market was valued at USD 2.98 billion in 2023 and is projected to reach USD 5.9 billion by 2032, growing at a CAGR of 7.9%.

India's electronics market is expected to reach USD 400 billion by 2025, increasing demand for local, cost-effective thermal solutions.

The global PC shipments in 2023 exceeded 265 million units, each requiring thermal pastes for CPUs, GPUs, and chipsets.

Rising adoption of robotics, CNCs, and EVs further expands the use-cases for high-efficiency, non-reactive thermal materials.

Startup India

GrapSys aligns with the Startup India mission, promoting indigenous innovation, import substitution, and job creation through rural micro-entrepreneurship.

Make in India

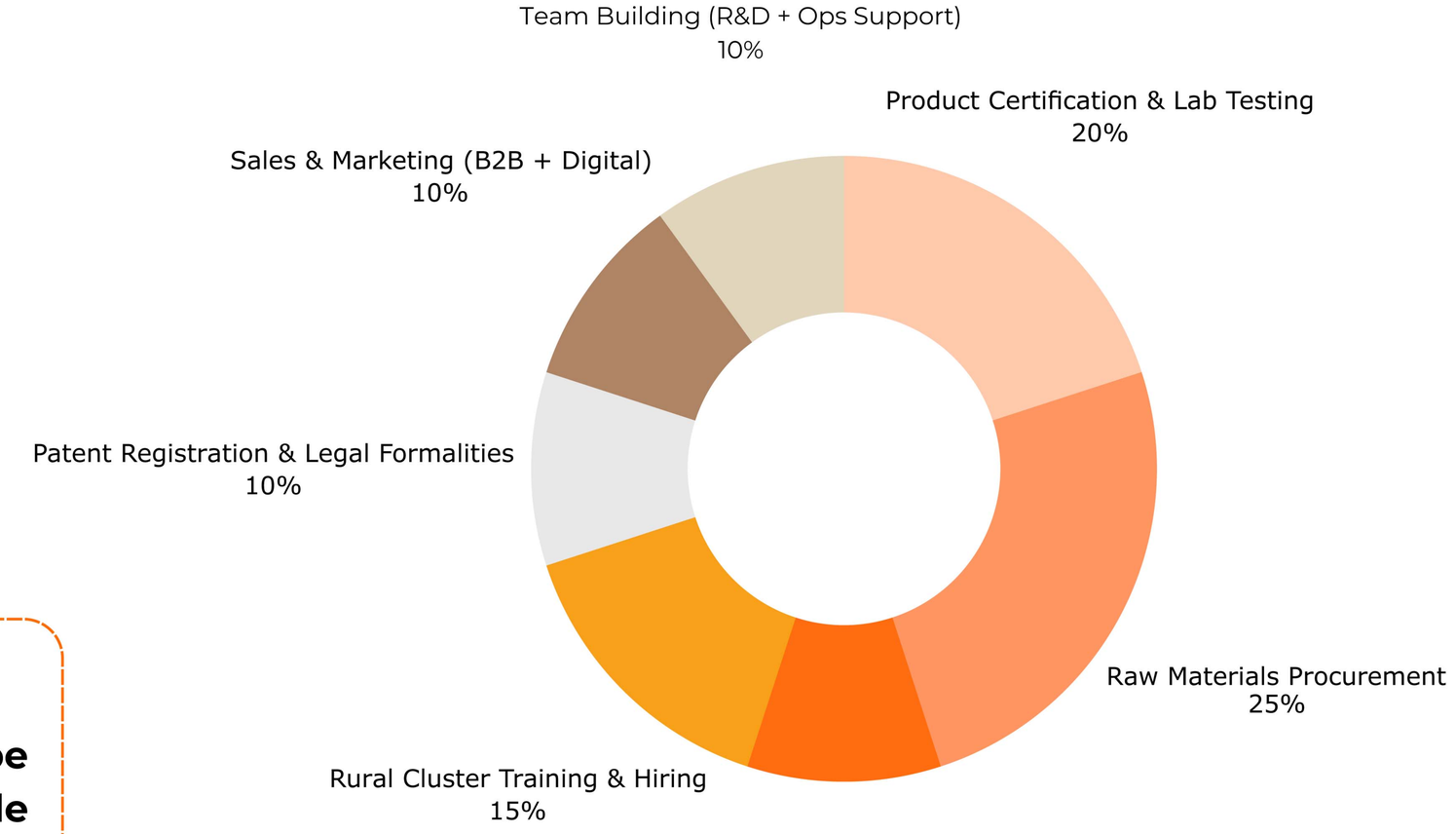
Our handmade thermal paste replaces fully imported alternatives, supporting Make in India by building local capability in deep-tech materials.

Skill India & Rural Livelihoods Mission

By training women in rural areas to manufacture thermal paste without

Source: *precedenceresearch.com*, ibef.org

Fund Utilisation



This fund will help GrapSys move from validated prototype to market-ready product, while creating rural jobs and global impact.

Get in Touch –
We're Here to Help!

Connect with us

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