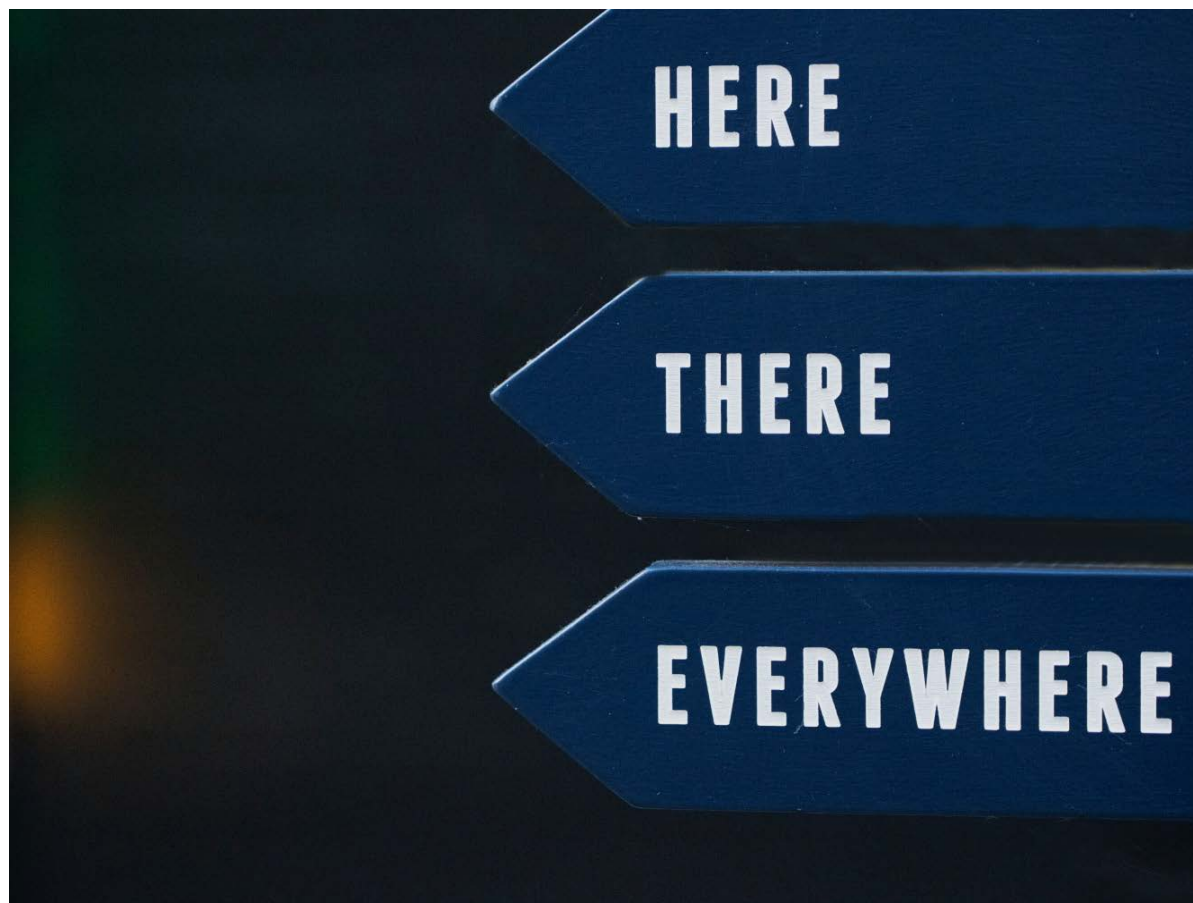


Gel Craft Healthcare (P) Limited

**THINK
OUTSIDE
THE BOX**



Gel Craft Healthcare ® Limited



Gel Craft Healthcare ® Limited is a registered MSME industrial manufacturing unit of its own innovative creations that are developed exclusively within India. The company was seeded as Gel Incorporation in 2006 and evolved to an independent OEM manufacturer of Gel products for foot care, cushioning, sports and health care sector by 2012. All these products are developed under the brand name 'medigel' [www.medigel.in] and available through its unit company Bionova Corporation (estd., 2012) dedicated for e-operations. In 2020, the company has joined as industrial technology partner with Defence Research and Development Organization (DRDO), Ministry of Defence (MoD).



“We believe path may lead to obvious goals but let’s try to make new paths that can leave trails for future generations”
-Ajay Gupta, CEO, GC Healthcare ® Limited.



The company has developed a series of products under 'Ultraswachh' technological initiative [www.ultraswachh.in] inclusive of Oxygen Concentrators (Ucchvasita); Confined Space Sanitization/ Sterilization Unit (Poorn Swachh, Vayu Swachh & VisankR); Multi-product Sterilization Unit (Tri-Netra, PPE Disinfection unit); Non-alcoholic Hand Sanitization Unit (Tri-Netra); Viscoelastic Gel with Covid Coat+ (OT Positioning Devices for Hot OTs); Mini Ozonizers (Samgrah Swachh); Anti-microbial coating (Covid Coat+) and; Fumigant Disinfectant (Triyogani). The company has also launched pre-hospital trauma care devices (life saving devices) [www.parikshak.com].

The company has evolved its targets to work towards provisioning of novel innovative products at extremely competitive cost with significantly superior quality. All the products are being evolved to have CE Certification. Medigel® brand based health care products even received REACH certification fulfilling commitment of company towards environmental safety standards. Such standards let company to get recognition as OEM by GeM portal operated by Government of India. Starting from Ultraswachh product under initiative of evolution of disinfection technologies in India, the company is now manufacturing 'CBRN Ultra Devices' and channel partner of other technology holders of Indian Defence Products namely, Protective Clothing and India 365 Masks with NFPA 1999:2018 compliance and EN certification respectively. The principle operation of company is in India however exports to European nations too.

The prime products under 'CBRN Ultra Devices' include ozonated space technology based 'oxygen concentrators'; 'multi-product disinfection devices'; room & vehicle disinfection units; non-alcoholic sanitizers; specialized heat sensitive medical device disinfection devices, Isolated patient transfers systems & viscoelastic gel with Covid Coat+ coating for health care units. All devices are developed using DRDO technology, validated and tested against COVID-19 and various microbes, safe for human use. Each device is unique Indigenous technology and presently no competitive counterparts are not being developed in India. All



technologies are focused on provisioning of 'pandemic resilient ecosystems' for various organizations. The company was working on R&D for development of life saving pre-hospital trauma care, transit care and during / post-surgical care devices. These Parirakshak devices include haemostatic, fracture, eye injury, chest injury management / life saving devices and scar reduction sheet(s). All the devices are available on www.parirakshak.com

In brief, Gel Craft Healthcare ® Ltd. primarily manufacture and distribute life-saving, supportive & restoration as well as lifestyle improvement & comforting based products, devices and accessories, derived either from proprietary elastomeric Gel Technology; DRDO's Ultraswabh Technology and Parirakshak devices. The new advanced Viscoelastic Gel (w. Covid Coat+) Operation Theatre (OT) Positioning Devices (with/ without film) adds into list of new products. In addition, the company provide a large range of OEM devices especially in sports sector using it's unique technologies partnering with multiple industries under Non-Disclosure Agreements. The company is dedicated for provisioning of multiple types of medical devices with export potential harnessing Indigenous technological base.



CBRN Ultra Devices

Technologies for Mankind



Poorn Swachh
(Ozonated Room & Vehicle Sanitization)



Triyogani
(Alcohol free hand sanitization
and fumigant)



Tri-Netra
(Ozonated Hand Sanitization Unit)



Viscoelastic Gel with Covid Coat
(90 day protection against COVID)



Samgrah Swachh
(Fruit & Vegetable Wash)



Ultra Swachh
(All Product Disinfection)



Taaran
(Isolated Wheel Chair)



Ati Swachh
(Heat Sensitive Med. Device
Disinfection)



GELCRAFT
Healthcare Pvt. Ltd.

www.ultraswachh.in

CBRN Ultra technological initiative was taken by INMAS DRDO to provide comprehensive cost effective solution of disinfection of personal articles, Personnel Protective Equipment, hands and fruits/ vegetables. However the initiative is not limited to this scope and continuously new innovative creations are being added. This technological integration device has multiple product variants i.e. PPE Disinfection Unit, Portable Hand Sanitizing Device, Fruits / Vegetables Sanitizer Dispenser; Heat Sensitive Medical Devices and Vehicle based disinfection systems. In advent of COVID-19 and it's impact on global scale exhibited a significant shift towards personal and community safety in the mindset of humanity. The continuity of health care operations is being considered as requirement of national security. All these technologies are developed using Ultraswachh Technology (license number 1135 issued on 20th October, 2022 by INMAS, DRDO).

| 5

The principle on which these technologies are developed include: (a) Integration of two or more technologies / system to provide cost effective solution in mitigation of CBRN Emergencies; (b) Complementarity between products to developed CBRN resilient ecosystem and; (c) Indovative designs with robust structures with failure safety and environmental safety provisions. The target while managing COVID-19 and future pandemic was to create innovative products for protection and disinfection under aatmnirbharbharat mission. The technology is transferred to Gel Craft Healthcare (P) Limited that is continuously manufacturing it and distributing it through its channel partners and other entities.

The first and foremost product was '**multi-product disinfection unit (Tri-Netra)**', a system based on 'ambient conditioned low cost high oxidative potential sterilization process' validated by designed units. This integrated device has ozone, UV-C (SPACE) and radical dispensing with optimized cycle having least effective contact time & degasing phase. It supportsboth Advance Oxidative Process (AOP) and Extreme Oxidative Process (EOP) standardized with bacterial spores to establish sterility assurance and utility in COVID-19 era as well as beyond. The radical dispensing system- medium 'Triyogani (Fumigant)' was tested against COVID-19 and other micro-flora. The units are designed to support PPE Disinfection at health care and industrial / commercial settings; Multi-product disinfection as universal sterilization (especially at residential places) unit and; heat sensitive medical device disinfection unit (Ati Swachh) for



devices that cannot be autoclaved. All the devices are designed utilizing standards of minimum of dual technological fusion.

Ati-Swachh Medical Device Disinfection Unit



With the advent of COVID-19, the current demand of medical device disinfection has been escalated many folds even in non-COVID departments like cancer care, cardiac, surgery, diagnostics, dental etc. As many of the diagnostic and procedural equipment/devices/tools/dental equipment are reusable, they require quick, sterilization-in-place (SIP) approach of medical device disinfection. The current hospital disinfection methods are generally conservative and conventional (such as autoclave) which may not be sufficient, quick and suitable at all with many of the heat sensitive medical devices such as plastic applicators, lumens, endoscopes, brachytherapy applicators, surgical implants, hydrogel based systems etc. Hence, 'Ati



Swachh'- heat sensitive medical device disinfection unit has been developed for effective, quick, and sterilization-in-place (SIP) sterilization of heat sensitive medical devices. It is useful in standard clinics, hospitals and even dental centres.

Viscoelastic Gel with Covid Coat (+) [Tapas Aasan].

The futuristic Isolation Wards and Operation Theatres should be able to manage both contaminated and infected patients due to CBRN emergencies. Foam being highly absorptive in nature and



cannot be contaminated / disinfected completely as well as increased



level of biomedical waste. Another technological marvel 'Viscoelastic Gel with CovidCoat(+) [Tapas Aasan] and its sheets can be cast into any OT Positioning Devices and OT/Isolated Ward Gel Beds (multi-use). It provides 90 day protective shield in single coating and thus its accessory item Covid Coat+ is



useful in quarterly enhancing its ability to withstand multiple microbes. Covid Coat+ itself provide surface protection against any touch surface reducing spread of infection to great extent (even tested against fungal infection as per EN 1650). Both items are available in combination, alone and even customized to multiple devices. The technology is used for development of OT Positioning Devices (with/ without film) for both conventional and hot operational theatres.

17

Samgrah Swachh: Fruits and Vegetable

Wash/ Mini Ozonizer

Samgrah Swachh (literally means – able to sanitize all) is a compact and handy device evolved from the concept of testing Ozonated Space Sterile strips which is a chemical indicator for Poorn Swachh and Ultra Swachh technology. It is able to generate ~5 Liter of Ozonated water in matter of 15 minutes providing ample amount for fruits and vegetable wash at domestic level. Thus, its major product usage is

“Fruits and Vegetable Wash”. It is also useful in sanitizing flowers and even useful for Dental Clinics (Equipment Wash) as well as R&D Laboratories too.



Non-Alcoholic Hand Sanitization Unit (Tri-Netra)



Tri-Netra Hand Sanitization Unit is a portable, wall mounted & contactless device that provides ozonated water treated optionally with triyogani solution (that converts water into hand sanitizer) in a continuous manner. It is extremely useful device in providing extremely low cost safe hand sanitizing system. It utilizes alcohol free hand sanitization fortified with Triyogani (syn-herbal formulation) Ozonated medium neutralizing even bacterial spores. The unit is provided with safety guards of catalytic convertor ensuring every emission is environment friendly.



It' per hand wash cost is few paisa only and is extremely skin friendly & fire extinguisher, unlike alcoholic dispensers. It is also free from any quarternary ammonium compounds like



Benzalkonium chloride or triclosan. Triyogani (Hand Sanitizer) is able to neutralize microbial flora by reduction factor up to 4 logarithmic with 15-30 seconds of contact time. It is available both in combination with Tri-Netra and alone too.

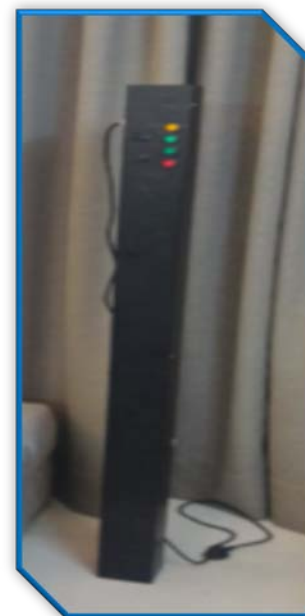
Poorn Swachh : Ozonted Radical Confined Space (ORCS) Disinfection Unit

ORCS technology was evolved as aqueous ozonated fog generation device within human safe limits. Poorn Swachh is its major product launched. It is useful in sanitizing confined spaces like hotel rooms, bed rooms, office room, residential flat or penthouse, independent unit developed on a plot, personal, commercial or evacuation vehicle (like ambulance), isolated ward, patient observation room, Intensive Care Unit and Operation Theatres etc. The fog generated by non-heating (without any thermal source) devices is in liquid phase and containing millions of molecules of water mixed with ozone alone or in combination with Triyogani (Fumigant) solution. This combination is tested and validated in 15 X 20 ftsq area using multiple microbial species with able to neutralize it with 99.99% efficiency. It is available in standard size that are able to sanitize a standard room with in 15 minutes.



Vayu Swachh: Ozonated Radical Air Disinfection Unit aka Air Sanitization Unit

Vayu Swachh is Universal Air Disinfection Device which is able to support continuous disinfection of air in confined chamber (room). It operates using air only and generate(s) only environmental friendly emissions. It does not leave any residue trail of hazardous chemical providing "pathogens" a resistance generation opportunity. It operates for minimum of year without any additional recurring filter change. The product has slender/ sleek design fits in every type of room without occupying an extra space. Unlike air purifying device: (a) It filters (purify) air as well as neutralizes microbes (disinfection); (b) It has self cleaning filters that gets sanitized due to inherent ozonated radical cycle; (c) It act as anti-Odor device as it



oxidizes VOCs (chemicals responsible for smells) and not just limits to size exclusion filtration; (d) It uses filtration, ionization, ozone led neutralization and UV-C disinfection in single device and; (e) It is Air Sanitization Device = Air Purifying + Air Disinfection.

Oxygen Concentrator (Ucchvasita)

The life-threatening disease conditions involving lack of oxygen i.e hypoxaemia and in such cases, oxygen is the only remedy. The upper respiratory infection cases are often accompanied with such conditions as observed in COVID-19. Even Post morbidity conditions in patients with reduced lung capacity require home care and even portable oxygen systems for travel. COVID-19 exhibited "surge requirement" to its worst case scenarios that can be repeated during long tenured wars, remote border location severity during wars, infectious outbreaks/ pandemics and damage to healthcare infrastructure during hybrid wars. Thus, the continuous availability of oxygen in primary healthcare clinics or smaller remote hospitals as well as even in district hospitals is an essentiality. Ucchvasita refers to high svas (breath) or simply "to breath again" thus used as trade name for oxygen concentrator that is required to recover from patients that are not able to breathe at 21% oxygen level (atmospheric level). Ultraswachh technology was a combination of one or more technology for desired output. Thus, while evolving technology driven products using this concept, ozone is used as primary sterilient and poorn swacch was evolved when combines with water and when ozone is directly used to sanitize air (vayu swachh). The extension of vayu swachh concept of medical grade air is further concentrated to generate medical grade oxygen using standard oxygen concentrator assembly along with Ag+ coated sieve in higher production models. It can be used 24 hrs continuously with oxygen flow rate from 1-10 LPM. It is Class II Type B medical device recommended for All Hospitals, Healthcare Unit and Home Care. The product is designed and developed in compliance with technical specifications of WHO. The cut off purity is set at < 82%, generates medical grade oxygen; operational noise ≤ 50 dB; Power Efficiency is ≤ 70 LPM; continuous 24 hours of operations; standard piping outlet with barb fitting; 0.5 LPM interval based flow meter and, with/ without booster pumps based on type of model used etc. Ucchvasita is an oxygen concentrator with (a) ozone linked microbial



neutralization and; (b) Silver (Ag⁺) coated anti-microbial sieve depending upon type of model which is uniquely used technology for double level of air sanitization. Also, it can have models as single unit to six combined units with varying range of 10 -250 LPM.

Taaran (Safe Passage) Patient Transfer System

Taaran (Safe Passage) Patient Transfer System is a modified wheel chair with isolation cover and an assembly that sucks out all exhaled air of patient, sterilize it using HEPA and UV-C combination and recirculate it. It provides safe passage for victim passing through contaminated environment and /or prevention of spread of infection in health care settings / public areas. It is useful for health care settings, airports, seaports, ferri ports, railway stations, institutions and malls etc. It has high capacity HEPA filters maintained at negative pressure to collect 99.99% of infectious droplets. The air flow is maintained such that every breath of the patient is sucked out. It is re-chargeable battery operated unit. It can be easily operated by single attendant. All the surfaces of Patient Transfer can easily be disinfected easily.



India 365 Masks

India 365 is pair of masks (as part of Protecton Protective Clothing of INMAS) works for complete functional year. These are Medical grade 3 ply surgical masks with FFP-I clearance and compliance with EN standards. It is re-washable and multi-use. The product is designed with global standards having

- adjustable strap (ensuring less pressure at back of ears)
- outer static grid layer (ensuring no shedding of virus from mask to unmasked person)
- inner layer : hydrophilic and absorbs saliva etc.
- standard white color with soft elastic built it for adjusting it various facial contours



- Full nose and mouth cover design

The product complies with global standards of safety including

- EN 14683 (European Standard) : 95% bacterial filtration efficiency against Staphylococcus aureus etc.
- Differential Pressure < 40 Pascal per square cm- provides extreme ease of breathability for the user
- ISO 22609 : Splash Resistance > 16k Pa : Resist penetration of synthetic blood
- CE certified product

The product is laundry washable and reusable (or referred as multi-use medical device)

- 40 degree machine wash low spin cycle mild detergent - 30 times
- Mild Hand Wash (especially who are using regularly in low or moderate risk areas): 100 days

Presently, company is working on new technologies with multiple start-ups to evolve technologies for Defence and Civilian sector especially health care settings. We are dedicated to provide innovative creations that can benefit society. We are open for new ventures and business partnership towards common goal of achieving excellence.





Contents

Title
From the desk of Chairman.. A word about us.....
Medigel®- C₃I Organic Gel Technology.....
<ul style="list-style-type: none"> • Evolution of Technology since ...<i>last one decade</i>... • Technology to Product(s)...<i>An effort</i> • Harnessing Market potential.....
Product Range (CE certified)
Business Profile
Road Ahead
Future Perspective
Certifications

Tables & Figures

Table-1: Comparative Assessment of Medigel® with Silicone & other Technologies

Table-2: Categories of Product Range under Medigel® brand

Table-3: Medigel®- Product Profile and its business potential

Figure 1: Cumulative Growth Product Development; Average : 08 Products introduced/ yr

Figure 2: Growth of National Distributor Network- Avg Addition: 40/ yr

Figure 3: Cumulative Growth of OEM Technologies; Avg Addition: 10/yr

Figure 4: Growth in Non Disclosure Agreements with Industries for OEM Supplies

Disclaimer:

The images of the products are indicative and items might vary. Bionova Corporation is a unit of Gel Craft Healthcare (P) Limited. Both are in joint venture, thus, name of the companies are reversibly used in the document, consider all activities as joint venture group of companies only. The information provided by the technical department is accurate to the best of their knowledge and scientifically evident. The utility in health implications is indicative subjected to the decision of medical practitioner. All are over the counter devices and used externally from the body. The technology devices have already received acceptance for manufacturing and marketing by Drug General Controller of India. C₃I Gel® and Medigel® are technology and master brand for all the products mentioned in this document, thus reversibly used.



From the desk of Chairman... A word about us...

Page | 13



As you are aware that over the years, Indian Economy, Education Information Technology & Health Sector has witnessed an era of continued progress. Their growth over the past few years has been remarkable and has raised various avenues of sincere workings for almost every segment of the society. It is pertinent to mention that growth and responsibility comes hand in hand as the existing laws of the land have almost made it necessary that the work till the grass root level is to be executed by responsible professionals armed with attentive, careful and sharp minds.

We have initiated a function specific company based growth using a consortia approach to reduce pooled economic risks especially in a self-funded mechanism.

Our prime global and domestic distribution partner has been developed as **Bionova Corporation (estd. 2012)** to ensure world class standards in terms of quality service and packaging standards.

Bionova is an ultimate place where all the stake holders from government and non-government sectors, R & D and educational institutions, industries can coalesce to develop group networks, as a united force ensuring both growth and viability.



Our responsibility is to continuously improve all aspects of the world in which we operate i.e. environment, health and socio-economic sectors – building a better tomorrow than today.

Medigel®, an organic C₃I Gel Technology, an idea conceived long back in 2003 by an Indian Researcher, present day Chairman, Joint ventured group of original and sole manufacturing Company Gel Craft HealthCare (P) Ltd (seeded in 2006 as Gel Incorporation, estd, 2014) and exclusive global and distribution



company Bionova Corporation (estd., 2012), had already benefitted 8.5 lakh people especially in rehabilitative and old people especially **'orthopedically disabled supportive care'** in last one decade. *As a founder Chairman of this joint ventured group of companies*, we take great pleasure in introducing a unique, only one of its kind, “Medigel®”, for the first time in India.

We have developed and produced Hydrocarbon based co-polymer compound under the branched name of “Medigel®”. Our gel based products are designed to provide cushioning & comfort for various applications. These products are cost effective, durable and are better than all available cushioning products. This material has exceptional gentle feeling on touch, which almost resembles the human body flesh. The rebounding effect of this material is more spontaneous than all the other contemporary available material like Polyurethane (PU), Rubber or Sponge.

The first ever World report on disability, jointly produced by WHO and World Bank states that nearly 650 million people are suffering from one or other disability requiring rehabilitative and supportive care. This calls for implementation of 'Convention of Right of Persons with Disabilities' promoting a concept of 'must have' resource generation by combined effort(s). Medigel® was developed to provide comforts, which none other can. Its various ranges of unique products will help in tackling problems, which were till now considered insurmountable. We have undertaken every initiative at our level to bring this technology to see the light of day and presently we are the brink of initiation of exponential phase of growth.

(Ajay Gupta)

Chairman, Joint Ventured Group



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Medigel®- C₃I Organic Gel Technology

Organic Gel Technology is a C₃I organic medical grade polymer or elastomer made up of natural oils by a patented formulation with oils: stabilizer ratio of 18:1 [as per G-certification standard no. 2056, standard developed by the manufacturer to ensure right quality of product under the brand from one batch to another] under the brand name MEDIGEL®. It is a closed cell polymer with extensive elasticity and cushioning having a natural feel of touching skin.

Page | 15

Medigel® is similar to human flesh in its consistency, touch, and reaction to pressure. One of its great qualities in seating application is that the gel conforms exactly to the body shape of the sitter, achieving a high degree of equal weight distribution and having good shock absorbing properties. The gel's ability to flow ensures effective distribution of pressure. Gel can be more than 1000% expandable and offers a correspondingly high level of comfort.

Organic Gel Technology is a C₃I (Cushioning, Comfort and Contour with extreme inertness) organic medical grade polymer or elastomer made up of oils. It is a closed cell polymer with extensive elasticity and cushioning with a natural skin touch feel. The hydrocarbon polymer compound is developed into beads that can transform into the desired shape without any gaps or cracks leading to a complete product. It is a technology edge that will provide specific contours to support complex body parts even mends into impressions complementarily by varying thickness within single product.

Medigel® will never lose its elasticity and stability. The softness, elasticity and tear strength of the gel can be widely varied. The “jelly like” characteristics of Gel can be transparent opaque and can be of different other colours. A covering material can also be used. If the covering material is damaged, however, the gel will not flow out. Another important factor is the good skin compatibility, especially when used in the medical sector and especially in the event of direct skin contact.

As a result of chemical composition profile, Medigel® offers an attractive **property profile**: (a) Individually adjustable shore hardness; (b) Aesthetic appeal; (c) Non-toxic and doesn't support bacterial growth; (d) Good pressure distribution; (e) High shock absorption; (f) High elasticity; (g) Good recovery capability; (h) Non irritating to skin; (i) Soft, strong and elastic; (j) Excellent moisture barrier; (k) Clear; (l) Excellent low temperature properties; (m) Low dielectric constant; (n) Good high temperature properties and; (o) Strippable.



Salient features

- a. Easy to use and can be kept on any existing flat surface or laying area – **no inflating, kneading or adjusting required** for optimal use.
- b. **Relieve fatigue** and prolong seating/laying comfort. This special formulation of Medigel® will never lose its elasticity and stability.
- c. The gel evidences a high level of heat conductivity. It absorbs body heat slowly and then quickly dissipates it again. This avoids “overheating” of the skin.
- d. **Effective pressure relief:** Perfect for those with Coccydynia (tailbone pain), haemorrhoids, bed ridden. Even after prolonged exposure to high pressure, Medigel® returns to its original shape with virtually no changes.
- e. **Minimizes Pressure Sores:** Good pressure distribution helps prevent pressure sores in diabetics of those confined to physical immobility.

Page | 16

Specifications

- Scientific design,
- Medical grade raw material (FDA Approved),
- Affordability,
- Durability,
- Light in weight,
- Easy maintenance (washable)

Characterization

The different property showed by Medigel®, depending on their cross linking degree, leads us to measuring its properties like:

Tensile Strength: Upto 1600 psi

Bulk Specific Gravity: Can vary from 0.3 g/cc to 0.9 g/cc

Elastic Deflection (Extension): Upto 1000% of (10 times) relaxed length at failure.

Color: Water Clear, so it can be reliably coloured from translucent to pastel to fluorescent to opaque.

Allergic reaction: Doesn't support bacterial growth

Toxicity: Nontoxic. Can pass Human Cell Cytotoxicity score 0, Human Cell Haemolysis score 0. Doesn't support bacterial growth.



Feature	Organic Gel	Silicone Gel	Others (EVA & PU Foam)
Definition	Organic Gels are inert natural oil based elastomers with a number of uses.	Silicone Gels are inert, synthetic compounds with a variety of forms and uses	EVA & PU Foam Technology are inert foam and polymeric ethyl vinyl acetate material can be deformed into various forms/ shapes
Cushioning & Comfort	Organic Gels are far superior than Silicone Gel based products in terms of cushioning and comfort provisions.	Silicone Gel based products are superior than rubber based products in terms of cushioning and comfort provisions.	EVA & PU Foam based products possess less cushioning and comfort with limited shelf life
Touch & Leak problems	Completely natural skin touch & bounces back to original shape due to elastomeric properties, No possibility of leaks	Gelly based systems are extremely soft, subjected to accidental leaks	Touch is synthetic away from natural touch however don't leak, with time it loses its air compression capability (PU Foam)
Elasticity	Being an extensive elasticity, used in numerous memory foam alike mattresses	More Elastic than EVA or PU based products	EVA has more elasticity than PU Foam however lesser than other available technologies
Composition & Development	Organic oils mixed as per specified patented formulation, and finished products are developed by injection and moulding technologies for desired purpose at extremely higher temperature conditions.	Powder form is mixed with other reactants to develop a polymer of desired use and by suitable cast-fit technology, taken into various shapes.	Polymeric Sheets of EVA able to get into various forms through engineering aid is possible while PU Foam has air gaps which undergoes compression and decompression cycle
Hydrophobic	Yes and floats on water	No but used for making water tight seals	EVA floats on water based on density equivalent while PU Foam absorbs water itself
Structure	Closed Cell Structure	Open structure permeable to gas, cannot be used where gas tight seals are necessary	Polymeric Toxic Chemical Structure While Poly Urethane Foam has open structure with air gaps
Combustion	Being elastomer it melts like a liquid with an invisible fume and nearly odorless. The burning gel has significant higher temperature due to phase change and should not be touched.	When silicone is burned in air or oxygen, it forms solid silica (silicon dioxide) as a white powder, char, and various gases. The readily dispersed powder is sometimes called silica fume.	Ethyl Vinyl Acetate (EVA) – extremely toxic in nature while Poly Urethane (PU) Foam also produces polluted combustion air thus requires to be used cautiously
Biodegradable	Organic Gels are biodegradable and green imprint technology.	Silicones are non-biodegradable but are absorbed by solids in waste water treatment facilities. Degradation is catalyzed by various clays	Biodegradable with extreme long turn over rates, however toxic by products leads to pollution of ecosystems

Commercial availability in Product Forms

- a. C₃I Gel Technology based MEDIGEL[®] products have reached to more than 8.5 lakh people (with average size of family = 5 members) with > 1.5 lakh units sold till date with an average increase in usage rate of 0.3 since 2006 till date (nearly 300 %).
- b. C₃I MEDIGEL[®] is provided as OEM supply for >200 unit products being exported to Holland, Australia, New Zealand, UAE & Europe.

Page | 18

Green Technology Test (G-Certified)

The company offers a manufacture certification of Green Technology based on combustion test, states that a piece of Medigel[®] burnt using a candle / flame exhibits a complete phase change with transparent smoke having no odour or toxic residue left. This certifies its environmental friendly nature and polymeric activity.

Evolution of Technology since ...last one decade...

The story of gel technology was started a decade back in the September 2003 wherein a chemical engineer by profession running a network of IT industry thought to provide an innovative cushioning mouse pad followed by mobile stick on gel for cars. Trials were conducted for more than a year with a great success of launch of the products in post Diwali session of 2004 as first phase products. Success attributed towards significant acceptance of the product(s) by the market, however as with completion of winter season, trial becomes unsuccessful due to heat induced falling of stick on gel for mobile holders. The complete product range was taken back with complete reimbursement. This first lesson has provided a moral ground to the company that unless trials of gel with significant variations in composition and relative outcome are not checked, no product will be developed. The policy still stands even after the successful acceptance of 85 products in the Indian sub-continent and > 200 OEM technologies provided to various industries having export quality and potential. The technology in terms of OEM products is now available in 05 countries. To achieve this task following activities were undertaken:

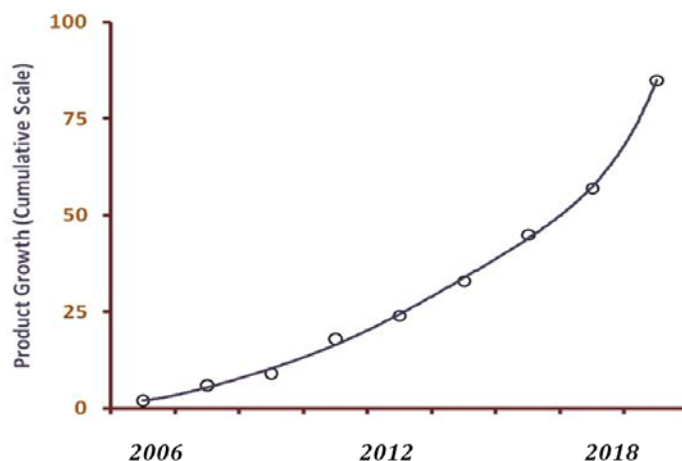
- a. 17500 trials of 285 stabilizers along with 67 quality organic oils are completed till date with an outcome of 07 different compositions so far of single variant Medigel[®], launched in 05 product ranges of medical grade only.
- b. 1095 trials of technology compatibility for bulk production of cost effective non-health technology variant, Unigel[™], launched 02 items for continuous production scale



- c. 22 Non disclosure Agreements were signed in last 08 years for supply of > 200 OEM items /technologies to 17 industries
- d. Awareness drive to sensitize community about various chronic ailments linked to lifestyle and their preventive and supportive care using Gel Technology

The process of transition is still undergoing however with more than 8.5 lakh Indians sensitized provided a boost ensuring quality product for specific target.

Technology to Product(s)...An effort



**Figure 1: Cumulative Growth of Products Development,
Average: 08 new products introduced/ year**

Having a technology is a seed, harnessing a technology is the ultimate step and the outcome is relevant product. The product growth as shown in **Figure-1** is based on R&D efforts and a learning experience itself. The process of development of product is costly as it is linked to development of SS-316 dyes of extremely superior quality. The average number of aluminium dyes lost during R&D trials per product is 3-4 along with associated product trial cost which is futile unless the production is supported by an efficient market supply. Since the range of such products was novel being all products of silicone and other material were imported only. The acceptance of product requires extensive sampling adds cost to R&D process itself. It clearly indicated that with respect to growth of the technology to product development, market response, modification and acceptance / conversion to bulk quantities is referred as lag phase (2006 till date).



At present, the company produces 126 products (excluding OEM) with >260 variations referred as items in which production is sequential, based on the demands from the market. The complete lag phase was supported by self-funded research only. The company has already reached to the starting point of log/ exponential phase subjected to availability of land, skilled workforce and monetary assistance.

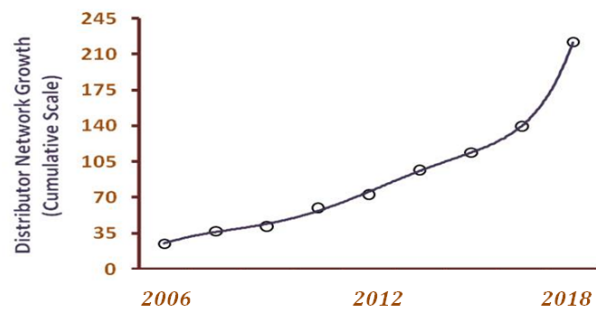


Figure 2: Growth of National Distributor Network- Average Addition: ~40 per year (without adding OEMs)

Harnessing market potential.....

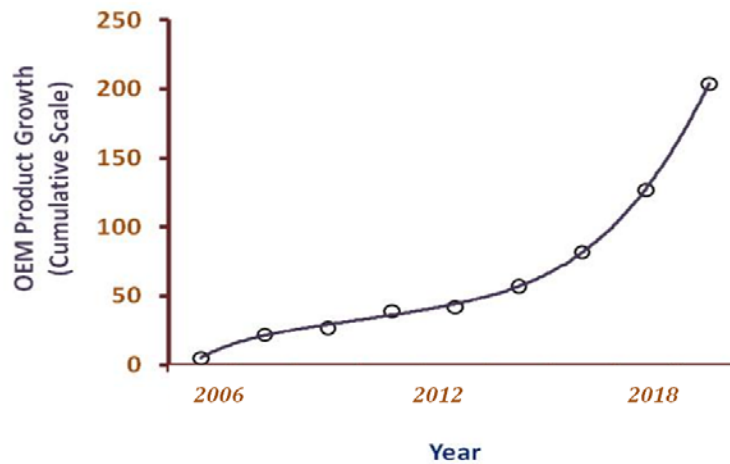


Figure 3: Cumulative Growth of OEM Technologies- Average Addition: ~10 per year (without adding Branded Products)

The key factors linked to harnessing market potential includes : (a) awareness about products with respect to their targeted utility; (b) comparative assessment with respect to existing imported technologies; (c) cost effectiveness along with surplus demands of margins from the distributor and dealer networks; (d) logistics support in association with tax and policy variation from one State to another.

In addition to these impediments to the general growth Gel technology was resisted due to psyche of 'imported technologies' are better in spite of cost factor. This myth breaking effort was extremely time consuming and costly while harnessing market potential. However, despite such bottlenecks, the company is able to develop



222 distributors/ dealers across the country since 2006 (Figure-2). The increase in cumulative annual product supply (independent of OEM products) showed a positive trend (Figure-1) with average rate of introduction of 08 new products. Such growth statistics clearly indicated the 'inherent domestic potential' of the sector however yet to see the exponential phase.

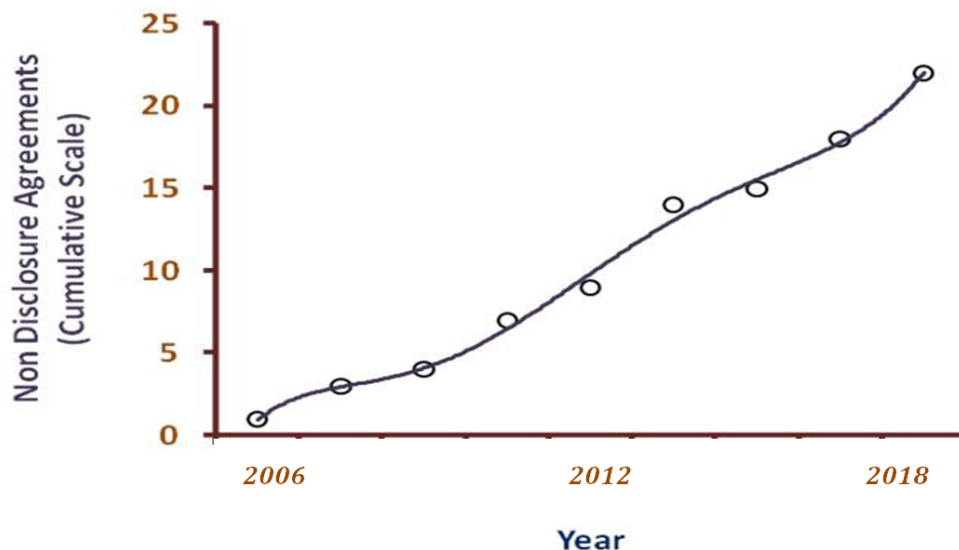


Figure 4: Growth in Non disclosure Agreements with Industries for OEM Supplies

In addition, the OEM supplies (on cumulative scale) under non-disclosure agreement with companies while safeguarding their designs also showed a significant rise (Figure-3 & 4). This, in turn, indicates the 'inherent export potential' of the sector with presently exporting the OEM supplies in 06 countries viz., Holland, Australia, New Zealand, UAE & Europe etc. Such growth also indicates the less import of silicone based products enhancing overall growth. At present, the company has explored only 0.06% potential at national level (with an assumption that at least one member of each family will be using gel technology product with family size $n=5$) while harnessing export potential is still in infancy due to lack of infrastructure to support continuous supply to meet their product demands. It can be visualized with the fact that India has 17.5% of world population and to reach its 0.06% potential the company has taken a decade. On one hand, such growth is meagre while on other hand, the rise in variants of product based on R&D will brought the necessary potential in coming future.

The **preventive/ prophylactic care** of numerous diseases / inactive or modified lifestyle situations like Plantar Fasciitis, Achilles Tendinitis, Foot blisters, Heel pains,



pinched neuroma, ball of foot pain, progressive flat foot, progressive pain towards ankle, foot nail pains, Metatarsalgia, stress fractures/ deformities, big toe pains, foot corns and calluses, bursitis, bunion, claw toe, overlapped toes, digit ulcers, hammer/ mallet toes, turf / stiff toe, shin splints, bed sores in comatose/ prolonged surgeries; spinal/ back pains, knee pains, cervical, soft baby skull deformity, coccyx (tail bone deformity), diabetic neuropathic sensitive foot, diabetic infection prone toes, high heelers (ladies) pains, arthritic pains associated with loss of body alignment; Feet stress during pregnancy (leg cramps); flabby aged sensitive skin injuries on toilet seats; fatigue and training injuries in sports and Defence Training; prolonged sitting induced hip pains; prolonged sitting induced ulcerations in morbid patients; long driving stress on buttocks and back; high impact zone (accelerated rides impact)/ occupations (extensive training stress/ combat resistant injuries); long standing occupational stress; middle age eruptive increase in exercise induced pains; pain during exercising; hallux limitus/rigidus/valgus; sports injuries; post surgical scars; post mastectomy breast prosthetic aid; patients with fractures undergoing physiotherapy; patients on dialysis and traumatic injuries can be provided by a wide range of Medigel® products.

Product Range (CE- certified)

The products were developed continuously since inception and now categorised as 05 functional categories. These categories are developed with respect to their primary targeted utility as described in Table-2.

Table-2: Categories of Product Range under Medigel® brand

S.No.	Category & Targeted Utility
1.	Footcare- A part of the body ignored for pains being part of lifestyle, however, there are numerous ailments like Plantar Fasciitis, Achilles tendinitis, Heel Spurs, Knee & back pains due to multiple reasons one of which is progressive flat foot etc. Foot being a shock absorber of our body, the products envisioned to its every part in order to provide (a) Cushioning and Comfort; (b) re-alignment of body; (c) elastomerism led increased activity; (d) contoured specific designs to mimic patterns of various non-accessible parts of foot. Such pain relieving and preventive foot care provides active orthotic support solutions for heel care; arch support and fore foot ailment management. A number of complete solutions in terms of shoes, chappals targeting specific orthopaedic and diabetic requirements are under active R&D. It contains 24 products with 56 items under this category.
2.	Cushioning and Fitness Care- This range has been developed primarily for 02 purposes Cushioning and Fitness. In the former category, we aimed (a) to add elastomeric superior

natural cushioning into the lifestyle of infants and old; (b) to provide bed sore prevention technology for physically challenged/ completely immobilised/ vulnerable patients. It includes baby care range; bed sores prevention mattresses along with spinal overlays; seat cushions both for lifestyle and patient care; gel pads/ sheets in customized range and home interior fashionable active cushioning products. In the latter category, special exercising devices and aqua gels for providing pain relief were developed. **It contains 22 products with 53 items under this category.**

3. **Personal Care:** Personal care range is an exclusive range of cosmetics and personal care products developed by SR Creations. The concept of this product line is related to naturally pure, synthetic-free, organic, preservative free targeting specific requirement of beautiful body. All the products are alcohol free and require in minimum quantity to obtain ravishing outcomes. It also complements Medigel product range on which any alcohol based perfumes cannot be used. The foot care range is complemented by foot perfumes and massage creams. Breast massage creams are available with breast prosthetic care. Body butters, Deep Moisturizers and Perfume Roll on essentially fits with cushioning and fitness range. If you are interested in using extremely pure essential oils based cosmetics, try these products. Remember we provide them in standard small quantities due to limited shelf life being organic and preservative free. **It contains 10 products with 14 items under this category.**

4. **Health Care Solutions-**This is the premium category by which brand name itself was derived i.e., Medigel®. The range includes life supporting, prolonged surgical care and post-surgery care products. In addition, a specific Operation Theatre positioning devices range with inherent exclusivity and superiority as compared to all existing brands of the world makes this category fits into export potential too. Life Supporting product range is still in R&D with amalgamation of other technologies to provide state of art technology based products. It contains 08 trauma care (09 items); breast prosthesis (two types X 12 variants each equals to 24 variants); scar reduction sheet (48 size variants) and 31 Operation Theatre Positioning Devices (56 items). **In all, there are 52 products with 137 items.**

5. **OEM Category:** One of the immediate requirement of increased sports requirement in domestic environment is to reduce injuries during sports / active training. A large number of sports gears uses gel based OEM interventions. Similarly, a large number of variants are always under trial for exports as well as fulfilment of domestic requirement. Work is underway to provide industry based customizable solutions in single window approach in which buyer can develop its own range using C3I gel beads with specific machinery designed by us. **At present, 18 products with multiple cast variants are available in this category and number is increasing everyday.**



Table-3 illustrates some of the items related to product (in terms of item variation); their primary utility in terms of health or other benefit; tag line comparison with competitive products, if any. This will in turn, provides indicators of existing and future business potential

Table-3Medigel®- Product Profile and its business potential*

Name of product (number of variants, items)	Primary Utility/ Health Benefit	Comparison with competitive products, if any	Community Need Analysis (Scientific Evidence)
Footcare& Sports Care			
Heel Pad Plain	It targets heel pain attributed towards any ailment like Plantar Fasciitis or otherwise due to tiredness	Silicone based synthetic variants (imported) with no elastomeric cushioning	10% of the population at some point in their lifetime experience plantar heel pain (Riddle and Schappert, 2004) ¹
Heel Pad Pando	Provides relief in Heel Pain with bony prominences		Plantar Fasciitis - 4th most common injury to lower limb (Ambrosius and Kondrachi, 1992) ¹ ; 1-2.5% of population on an average look for medical help to manage such pains annually ²
Heel Pad Donut	To provide gel aided air cushioning to heel spurs		01 in 10 people will have heel spurs while 01 in 20 will have foot pains ³
Heel Cup	To provide extreme cushioning to heel for relieving heel pain and reducing sores		It takes nearly 12-36 hours when a soft tissue injury in heels to reach maximum soreness ³ ; maximum pain was also shown at that time
Ladies Heel Cushion	Cushioning to ladies while wearing high heels reduces pain		> 20% of women feel extreme heel pains within 10 minutes of wearing high heels
Heel Care Socks	Fashionable while providing cushioning to ladies heel along with reduced probability of turn around	No counterpart product available at present	04 different reasons for which women of meteropolis wear high heels : (a) enhance professional attire (70%); (b) lavishing look (50%); (c) astonishing looks to legs (45%); (d) appearance taller than men (35%)



Heel Device	Targeted heel pains with progressive flat foot as provided with minimal arch and also reduces sores due to cup like structure at posterior end of product	Silicone counterpart available, however design superiority and elastomerism aid significant potential	There is 20% higher chances of getting plantar heel pains if person is suffering from progressive flat feet ³ .
Heel with Arch	Targeted heel pains with progressive flat foot as provided with starter arch		Loss of natural arch support in progressive manner is linked to transferring of body weight on ankle (chances of Achilles tendinitis increases significantly) followed by knee and back in succession
Arch Support	Primary solution for progressive flat foot	Counterparts available are not effective in both design, cushioning and cost imperatives	20-30% prevalence rate is associated with Flat Foot as compared to 10% in case of high arches. Echarri and Forriol (2003) found a greater incidence of flat feet among children from urban areas when compared to children from rural areas. Esterman and Pilotto (2005); Rao and Joseph (1992) pointed out that flat foot is most common in children who wear closed-toe shoes, less common in those who wear sandals or slippers, and least common in the unshod ⁴ .
3/4 Insole	Progressive flat foot, hind foot pain & especially ball of foot pain caused due to number of ailments	Silicone based synthetic variants (imported) with no elastomeric cushioning	Persistent pain in the ball of foot, one may have a condition called Morton's neuroma. and it probability is 8 to 10 times greater in women than in men ⁵ .
Sports Insole (Starter Arch)	Sports persons under training as complete solution to prevent injuries and enhance body alignment	No such counterpart designed product available	8.1 injuries/ 1000 Athlete -Exposures (games + practices) with maximum in football with 30% cases of ligament injury in an overall occurrence of 50%



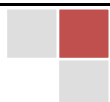
			injuries restricted to lower limb - i.e., knee, ankle and foot ⁶ .
Insole with Arch-	Persons engaged in adventure sports and also a complete solution for hind to fore foot pains except toes	Silicone based synthetic variants (imported) with no elastomeric cushioning	As per report in 2005, Ratio of foreign: Indian tourists is 10:90 as compared to 60:40 five years prior to 2005 and an expected to attract half a million foreign tourists despite of still not a furnished sector in adventure sports ⁷ . Foreign travellers arrival has reached to 6.31 million in 2011 with a growth of 9.2% over 2010. Rs. 220.76 lakhs were spent by Indian Institute of Skiing and Mountaineering, Gulmarg in training of trainers in 05 top adventure sports by Government of India as per annual report of 2012-2013 ⁸ .
Universal Insole	Ideal for all age groups, foot pains with no progressive flat foot	Silicone based synthetic variants (imported) with no elastomeric cushioning	54% of 1.2 billion people are less than 24 years old and by 2015 it will reach 55% (243 millions) ⁹ - all looking for space, safety and needs to fight numerous health issues provided by change in lifestyle (foot health).
Rocker Insole	Long repetitive walking & retail trade occupation personnel etc.		European Agency for Safety and Health at retail work (OSHA)- lifting loads; sprains and strains from repetitive work; slips, trips and falls ¹⁰ - all might lead to foot injuries.
Rocker Insole (Diabetic)-	Diabetics foot care with complete body weight transfer technology		
Diabetic Gel Socks	Neuropathic sensitive diabetic foot care	No such counterpart designed product available of organic nature	With 61 million diabetics present in India, 100 million diabetics by 2030 ¹¹



Lifestyle Socks	Ideal for all age groups, foot pains with no progressive flat foot	No competitive counterpart available	10,000 steps / day is ideal while 8,000 steps/ day is recommended for healthy lifestyle. 2.5 m average stride means 5 miles distance every day as per pedometer readings. Lifestyle gel socks reduces tiredness, improving strength aid achieving desired health benefits ¹²
Sports Socks	Adventure sports and sportsmen under training with extreme sweat absorption and gel cushioning	No competitive counterpart available	In many sports, the foot absorbs tremendous shearing and loading forces, sometimes reaching over 20 times the person's body weight ¹³ .
Impact Resistant Socks	Especially designed for Defence Force and Uniformed Responders	No competitive counterpart available	Stress Fractures accounts for 7% incidence rate along with certain biomechanical factors like back and hamstring flexibility, high arches, bone geometry, genu valgum, low arches, restricted ankle dorsiflexion, and increased hind-foot inversion are known to make a person more prone to injuries- as per studies on trainees in Indian Armed Forces and others ¹⁴ .
Toe Separator	Infection between toes led aggravation due to touch can be prevented but cannot be worn inside shoes		Fungal nail infections global prevalence rate : 3-26% with maximum risk in case of diabetics due to reduced immunity ¹⁵ .
Toe Spreader	Infection between toes led aggravation due to touch can be prevented but can be worn inside shoes especially in diabetics	Silicon counterparts (imported) in nature are also available, though lack elastomeric cushioning and not cost effective	
Toe Spreader with D-ring	Big Toe Pain; digit ulcers, injured, ingrown and deformed nails, bursa, painful corns, blisters and lesion management		Morton's Toe has a prevalence rate of 10% in general population ¹⁶ .
Toe Spreader (D)	Prevents aggravation of bone		20,502,308 expected



with Bunion Sleeve	protrusion & straighten toe in management of bunion, overlapping toes, hammer toes		incidences of bunion (extrapolated) against 1065070607 population ¹⁷
Toe Cap	Protects and Cushioned Injured / Infected Toe		One survey of participants in a 1973 marathon reported that 14% of the runners suffered blisters, chafing, or loss of toenails that persisted for at least a week after the race (with only 0.1 % cases had history of toenails) ¹⁸ .
Toe Crest	It align all five toes; prevents toe back strike (flat footers) & diffuse pressure on toes equally in 2nd Metatarso-phalangeal joint (MPJ) problem & progressive pain towards ankles		Kohls-Gatzoulis (2009) found a prevalence of 3.3% in females over 40, while 9.2% of elderly patients in a preliminary study had the condition of acquired flat foot ¹⁹ .
Toe Spreader (D) with Metatarsal Cushion-	Management of painful calluses; overlapping toes; ball of foot pain and Metatarsalgia		Most common foot and ankle disorders include toenail disorders (74.9%), lesser toe deformities (60.0%) while corns and calluses (58.2%) in a community based study ²⁰ .
Toe & Metatarsal Protector -	Management of painful calluses; overlapping toes & bunion; ball of foot pain and Metatarsalgia		Athletes who participate in high-impact sports that involve the lower extremities commonly present with forefoot injuries, including metatarsalgia ²¹ .
Slipper Metatarsal Cushion	Painful calluses; Metatarsalgia; Progressive pain towards ankles and used for cushioning to metatarsal pains while wearing slippers	Silicon counterpart not available as it is a new design	Women wear more slippers than shoes- an established fact. higher possibility of painful calluses in metatarsal region cannot be ignored.
Cushioning and Comfort Care			
Baby bed with pillow & underlay	Alignment of soft skull and extreme elastomeric cushioning which can be easily be maintained	Foam based counterparts with low shelf life and limited cushioning / high maintenance cost are available; soft skull and bed sore prevention due to extremely soft skin is not available	The soft spots of baby's head (fontanelles), two in number are indicators of their health at the time of birth and growth ²² .
Mattresses	Bed sore prevention technology	Air and Water mattresses. Two phase technology	Pressure sores remain common, with a



		does n't provide effective solution.	prevalence of 5 to 9% and more than 70% occurring in patients over 70 years of age ²³ .
Coccyx Seat Cushion	Prevention of pain in tail bone deformities while sitting	Inferior counterparts available however no bed sore preventive technology available	Coccydynia is rare, accounting for less than 1% of back pain conditions reported to physicians (Lyons). Because not all cases are reported, data are lacking on incidence and prevalence ²⁴ .
Sitting seat cushions	Long sitting occupations like software developers	Foam / fibril based counterparts	Occupational sitting time is where the epidemiology of physical activity first began ²⁵
Seat Cushion for Cars	Impact resistant protection to buttocks and reduce tiredness while long driving occupations	Foam / fibril based counterparts	Low back pain, asthma, depression and diabetes with 2 times higher probability of high blood pressure in transit workers ²⁶ .
Bike Seat Cushions	Only OEM supply to major brands	No such counterpart of shore value < 0 is available	India is the second largest motorcycle (6.54 m produced in 2007-08) and the fourth largest commercial vehicle manufacturer in the world ²⁷ . With increasing traffic density, sudden breaks often increase vibrational impact significantly.
Wheel Chair Cushions	For prevention of bed sores at buttocks and back in long sitting due to accidental immobilization	No such counterpart of shore value < 0 is available	The country's disabled population has increased by 22.4% between 2001 and 2011 ²⁸
Wheel Chair Pad	For prevention of bed sores at buttocks and back in long sitting due to accidental immobilization	No such counterpart of shore value < 0 is available and highly cost effective too	
Gel Pads (Overlays)	Spinal overlays with dual benefit of elastomeric cushioning and spinal care interface	No such combination exists	Locomotor disability was defined as "the loss or lack of normal ability of an individual to move both himself/herself and/or objects from one place to another. Its incidence rate is continuously



			increasing ²⁹ .
Pool Chair Pads	Completely washable and hygienic highly durable oil massaging pool chair pads with ability to float on water	No organic counterpart available	The global home furnishing industry is growing continuously and it is nowhere going to stop. It is expected to reach \$700 billion mark by the year 2015, based on a research conducted by the Global Industry Analysts ³⁰
Kitchen Mats	Ladies standing in kitchen for long hour working	Counterparts are extremely inferior	
Garden Mats	Protection to knees while working in gardens in bending position	Counterparts are extremely inferior	
Health Care Solutions - General, Preventive, Pre and Post- Surgery Care			
Toilet Seat Cushion	Extremely soft reusable toilet seat cushion for fragile skin in old ages	Such reusable and extreme cushioning counterpart not available	The current survey demonstrated that "fragile skin" is perceived to occur in a substantial proportion of individuals from any given country, particularly in the age range of 15-34 years, regardless of skin type ³² . With ageing such situations worsen.
Back Rest	To provide cushioning and support in case of back pains	Foam counterparts with limited cushioning and elastomerism are available	There is substantial information on low back pain prevalence and estimates of the point prevalence range from 1.0% to 58.1% ³³ .
Gel Balls	Stress Relieving especially to recover arms in case of post fracture condition	No counterpart of such elastomeric rebound available	Stress is considered as "the invisible" sickness which affects all people; therefore we cannot afford or ignore it. Stress refers to the dynamic state caused by the physical, psychological, and social demands which are assumed to be threatening to an individual and leads to exceed in his or her coping resources. This can result in 'strain' which can be physical, mental, or behavioral response or manifestation. ³⁴
Heal Dressings	Under active R&D	Under review of	10.1% of all deaths in



Burn Dressings	Trial completed	comparative analysis with counterparts	India is due to accidental trauma. A trauma related death occurs in India every 1.9minutes. ³⁵ Yet this industry is still in settling mode.
Wound Sealents	Under active R&D		
Nose Bleed Sealents	Under active R&D		
Gel Splints	Prototype developed	Imported counterparts are costly, not cushioned effectively and being compared.	OEM supplies for 17 industries in 06 countries with 22 NDA has already achieved by the company.
Knee Support	Available by the manufacturers who take OEM supply	Foam counterparts available	
Eye Shield	Prototype being developed	Bandages with no shielding available	
Gel Sheet Orthotic Lining (Customised)	As per the requirement of manufacturers / users	Not available similar technology	The developed countries with a small proportion of the world population account for almost 50% of breast cancers diagnosed worldwide ³⁶ .
Gel under cast Padding	Trial completed.	No counterpart available	
Natural Touch Breast Prosthesis	Drop Type for external use in case of breast removal of cancer patients	Silicone based synthetic variants (imported) with no elastomeric cushioning	
Scar Reduction Sheets	Available in multiple range of sizes and highly useful devices in reduction of scars after surgery	Only available silicone imported counterparts in pack of 12 weeks with limited sizes and utility	Progressive scarring lead to keloids formation and age of scar is detrimental factor especially with substantial increase in number of surgeries.
Operation Theatre Positioning Devices - specialized branch of care during surgeries			
Donut/ Open Head Ring	Supports patient's head during prolonged surgeries (air and gel cushioning)	These are Latex free, non-foam, non-silicone-SPIC technology based Medigel® devices. The counterparts available are film based and gelly like material filled in with limited possibility of design and comfort evolution. Silicone counterparts are non-elastoemric less cushioning and extremely costly.	The burden of surgery is referred as DALYs. The estimated surgical DALYs per 1000 population is 27 with maximum 31 is South East Asia. Out of the various common attributes, other accounts for 05 cases per 1000 population on a global scale ³⁷ . Among this category, the probability of post surgical scars is one of important factor.
Closed Head Ring	Supports patient's head with complete coverage to back of head during prolonged surgeries		
Heel Support Pad	Relieves pressure from heels during prolonged surgeries by Elastomeric pressure redistribution induced enhanced blood flow to extremities		
Contoured Arm Board Pad	Anatomically shaped armboard pad to provide added support and stability by pressure redistribution		
Dome Flat Bottom Chest Roll	Provides excellent support and stability to chest areas & other body parts by complete pressure redistribution		
Horse Shoe Ring	Supports Patient's Face during surgery allow access to intubation due to its		



	contoured features with no pressure on eyes especially in prone position due to elastomeric gel technology	However every such case will have burden of soreness of tissues, pressurised ulceration during prolonged surgeries, a growing concern.
Sacral Protector	Provides protection to unprotected sacral area in lithotomy and supine position, by relieving pressure and transversing it to peripheral areas	
Hip Pad Position Device	Hip protection with centrifugal equidistant pressure distribution during prolonged surgeries	
Ulnar/ Brachial Nerve Protector System	Providing protection to the sensitive areas (nerve endings) of elbows and arms during prolonged surgeries	
Flat Bottom Chest Roll	Provides excellent support and stability to chest areas during prolonged surgeries	
Gel Base for Metallic Neurohead Frame	Provide cushioning interface to metallic neuro-head frame during prolonged brain surgeries in prone position	
Patient Positioner Device	Supports patient's twisted body parts during prolonged surgeries & protect body parts in various uncomfortable positions against torque by complete pressure redistribution	
Prone Head Rest	Supports patient's head in prone positioned prolonged surgeries & protect head, neck and ears in prone position by complete pressure redistribution	
Operation Theatre Table Pads	Supports patient's body during prolonged surgeries & protect body contours and prevents bed sores by complete pressure redistribution	

* The list is not exhaustive while indicative

Business Profile



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The relative R&D funding to support this growth that 43% of total earnings was re-invested to support the exploring domestic and global coverage developed over a period of 10 years. This can be further understood by the following facts that on cumulative scale every year 08 new products are added into the domestic market as finished products while in case of OEM supplies, nearly 10 customized designed products are added, an indicator of inclusive growth towards exploring its export potential (Figure-1 & 2). The analysis showed a growth of addition of > 40 distributors at national level every year on an average, an indicator that product range and technological superiority has been accepted by the users (Figure-3). At present, sports industry at global level accepted this range as a part of OEM component to provide elastomeric cushioning to prevent injuries. The OT Positioning Devices has also started getting regular supplies to hospitals and distributors. We will be launching our 05 products in a world class standard packaging in premium designs on e-portals as our next futuristic step in this business model.

Road Ahead....

Technology and product evolution go simultaneously and our fabric of working is knitted together by the threads of active and applied R&D for future endeavours. Some of the salient technologies that are in pipeline based on existing pace of growth of research in this sector are discussed below. The list is not exclusive and keeps on adding new dimensions due to convergent growth of industry *per se*.

Gel Fabric Technology (GFT)

GFT is fusion technology that adds cushioning impact to fabrics and it aids to future generation clothes at a minimum thickness of 0.4 mm. Our R&D team has developed first prototypes being tested for strength, compressibility, stretch ability and utility in health aid products.

Foam Gel Technology (FGT)

FGT is a low cost foam gel technology with extreme softness (Shore A < 0) and will be able to an inexpensive substitution of 'memory foam' technology. It an extended shelf life foaming gel with high level of durability. It is the level of prototype development.



Gel Spray Technology (GST)

GST is an advanced industrial/ domestic delivery system to provide gel in cold air less spray system, able to develop products/ services which are beyond imagination especially in drug release system, future generation clothing etc. It relates to the principle of filling spaces with high compressive ability, an aid where structure itself is not an inhibition to health care.

Page | 34

Gel Body Implants (GBI)

GBI is next generation inert implants able to mimic internal physiological environment such that it will aid natural cushioning within body for restoration of life style especially in old people or injured victims. It would aid rehabilitation industry to new dimensions of adding value to life.

HSM (Human Skin Mimics) Robotic Technology

HSM is a specific technology that would fill the gap between next generation human androids. It would provide them a membrane that can make functioning nearest to human touch. The next generation robotic machinery has added human value to ascertain that next 100s of years will see a rise of interdependence of technology and *Homo sapiens* with a human touch.

The another dimension is product evolution from (a) existing products commercially available in the Medigel and related brands and (b) conceptualization of novel products based on community needs.

Future Perspective

The extrapolation analysis based on business growth since 2006 till date was used to predict business potential for next decade. In this analysis, the micro level community 'need assessment' rates were estimated as 24%; 13.1%; 14.8%; 22.9% and 30% as growth potential indicators for four different categories. The categories are (a) footcare; (b) orthopaedic footwear; (c) cushioning and comfort care and; (d) health care supportive solutions- OT positioning care respectively. Prediction analysis revealed that there will be 6% increase in product variants. A growth rate of 5.5% is expected in OEM product supplies along with 7% increase in signing of non disclosure agreements.



Parirakshak™ term referred to technologies, products, systems, processes and applications for saving and restoration of life against all odds. The concept is based on 'utilization of best available or ancient technological wisdom' for managing existing and future challenges of mankind. The ideas that are lost in past due to multiple reasons are being re-visited ensuring its optimal utility.

The first focus of Parirakshak™ Technological forum is "Buddy Care Trauma Devices". Trauma- a major causative factor for unprecedented death since inception of life forms on earth. Human race survived through periods of evolution by using range of devices developed against uncontrolled bleeding, wound management, burn care, snake bites and infectious/contamination management etc. The advancement of weapons led to development of weapons of mass destruction that can even makes us extinct. However, among any war, the territorial integrity can only be won by direct combat war on grounds at a particular stage. A morbid victim is responsible for loss of morale of many during war time as compared to a dead victim. This lead to generation of tactical warfare i.e. able to inflict injures of grave nature. The effective management of such injuries itself put Forces back into action during prolonged wars.

In civilian sector, deaths on roads due to accidents (some-one dies in every 2 min) especially in developing / under developed world are highest due to lack of standards / proper medical care. In developed world, in spite of significant medical care and interventions at each stage, death toll is limited, though morbidity is still there. The underlying reason is On-Site spot care within golden minutes. The basic concept of trauma management is "what we do in first few minutes, first one hour and eventually in first 24 hours".

Parirakshak™ - Buddy Care Trauma Devices focussed on development of simple, easy to use (preferable self-usage capability), faster in action with an intention to save life and reducing probability of long term morbidity. The following sections describe about various devices that are manufactured under this targeted goal of "protecting lives from all aspects". It includes Self Protect, Tourni Gel, Gel Sealants and Gel Splints. It initiated with self protect device usage followed by major injury management by TourniGel and stabilized by Gel Sealants. In case(s), fracture management is required to prevent further stress on limb, Gel Splints play an active role in Fields. Self Protect devices also include specific protection in contaminated/ infectious management and devices that aid restoration of life in longer run.

Parirakshak™ - Self Protect

Self protect devices are medical devices that intend to protect against multiple odds on its own with self-usage ability. It includes haemostatic device, damaged skin protection sheet, pain recovering cold patch, hot & cold extreme pain management device etc. All the devices are used either alone or in combination with other existing devices based on intended life saving or restoration utility.

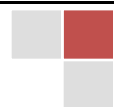


Name of Product		Intended Use	Design
Self Protect (H)		Haemostatic devices using zeolites that have ability to stop blood of oozing wound in less than one minute, available in naïve and pouch compositions.	Activated granules sealed and gamma sterilized for direct field applications as naïve or within pouch composition. Advance products are fortified with active principles for immediate sealing too.
Damaged Skin Protection (DSP) Sheet		Non-fibrous, easily removable, with/ without anti-microbial coating gel sheet that provides natural touch to damaged skin ensuring no aggravation of damage.	Viscoelastic gel sheet with / without anti-microbial /Covid Coat+ based on intended usage as trauma gel sheet or burn care sheet in emergency care.
Cold Patch		Aqua gel enclosed patch to provide cold treatment for pain relief	Standard encapsulated pouch filled with aqua-gel supporting cold treatment
Hot & Cold Patch		Aqua gel enclosed patch for hot & cold treatment for extreme pain management	Standard encapsulated pouch filled with aqua gel that shows reversible cycle of hot and cold treatment for pain management in recovery & rehabilitation scenario.

Parirakshak™ Tourni Gel

A tourniquet is a device that is used to apply pressure to a limb or extremity in order to stop the flow of blood. It may be used in emergencies, in surgery, or in post-operative rehabilitation. A tourniquet is also used by the phlebotomist to assess and determine the location of a suitable vein for venipuncture. The exiting tourniquet skin touching surface are rough and belt like that are effective though also causes skin disruption. Tourigel is layering of these structures with high tensile elastomeric viscoelastic gel that can support compression yet soft and compatible to skin.

Name of Product		Intended Use	Design
ToruniGel-Release	Rapid	Simple tourniquet with gel layered used by phlebotomist for location of suitable vein.	Primary Tourniquet with gel padding ensuring prevention of skin disruption.
ToruniGel-Multipurpose		Belt like tourniquet with multipurpose as rapid	Primary Tourniquet with gel padding however ends with steel hooks for its



ToruniGel- Windlass	release, arm support etc. Advance Tourniquet using windlass mechanistic design except its inner layer are gel padded too. Use for management of arterial injuries wherein uncontrolled blood flow is extremely lethal.	multi-purpose utility. Windlass Mechanism based Tourniquet with Inner gel padded layer ensuring to no or less impact on skin disruption.
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Parirakshak™ Gel Sealants

The sealants are category of medical devices that ensure that proper compression is in place so that oozing wounds are managed during transit of victims to definitive medical care. These sealants don't have any medicated layer coating while it is property of high tensile strength Viscoelastic (elastomeric) gel that stabilizes the wound by act of compression. It is generally used with other haemostatic or wound care devices for primary management. The devices are designed with / without Abdominal pads (ABD pads) in accordance with their intended usage. It covers all the parts of body especially chest and eyes etc.

Name of Product	Intended Use	Design
Gel Wound Sealant	Management of oozing wound wherein haemostatic agents can be used and compression is needed to stabilize the limb.	Primary Layer: ABD Pad with or without haemostatic device linked with non-wooven layer Inner Layer : Non-wooven layer pasted on Viscoelastic Gel with anti-microbial or Covid Coat+ Outer Layer : Non-wooven layer on anterior side is affixed with removable Velcro belt.
Gel Chest Sealant	Compression sealing of oozing chest with significant injury wherein haemostatic agents cannot be used without supervision being risk of internal physiological issues.	Same as above except no haemostatic device is used and size / thickness is compatible for management of chest.
Gel Masking Sealant	It is a non-haemostatic device with self sticking	No ABD Pad, haemostatic Device is used in this sealant and customized cut



	ends directly applicable on skin outside the wound area so that it gets masked and due to presence of anti-microbial agent layer prevents wound injury.	to keep wound free after decontamination of other parts of skin. This is used in CBRN environment for masking open wounds prior to decontamination in sensitive and local body parts.
Gel Eye Shield	It is affixed on surface of wounded eye and creates a required pressure to immobilise its movement preventing aggravation of injury.	Inner Layer: Eye patch as thin layered absorbing pad with back side stick to Viscoelastic Gel layer Intermediate Layer: Viscoelastic Gel Outer layer: Anterior layer is non-wooven and can be affixed using tape.
Gel Eye Patch	The gel eye patch is for the protection of eye which is either injured, lost or not good to observe, otherwise also used for fashion to mimic pirates by kids during fashion shoes, available in blue color. It prevents entering of	Gel Eye patch with band strip of Velcro to affix it. light into eye as required in post operative states without much touching of sensitive eye, available in black color.

Parirakshak™ Gel Splints

Splinting is a procedure by which a strained body limb is maintained in its position and as the limb is fractured, it needs to be maintained such that no aggravation of limb injury, muscles don't get strained and possible tendons / ligaments should not be put under pressure. As our body parts have unique design of joints varying in nature too, it is essential to devise a splinting device which could be easily modifiable into desired context. Gel Splints are some of the important products in fracture injury management.

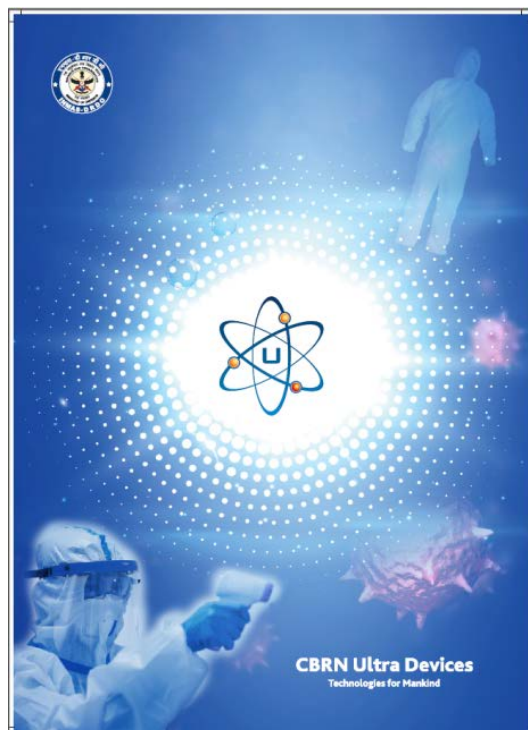
Name of Product	Intended Use	Design
Gel Splint- All Purpose	Can be cut into various shapes and sizes; X-Ray penetrable and have ability to get more rigid as torque is induced.	Primary Layer: Viscoelastic Gel with Covid Coat+ Inner Layer : Alumimum Alloy or similar malleable metal Outer Layer : Coated with pain relieving



			spray (optional) Packed in vacuum to ensure spray remained intact. (Provided with bottle of pain relieving sprays).
Gel Splint- Lower Limb	Legs are subjected to major fractures as being first to be affected during mines / bomb attacks	Composition same as above, designed in Leg Support System.	
Gel Splint- Shoulder Support	Shoulder Dislocation and upper limb injury during bomb blasts is one of the major phenomenon leading of aggravation of health of victim	Composition same as above, designed with soft gel ball in between sandwiched design to support arm.	
Gel Splint –Arm Support	Arms are subjected to major fractures as being first to be affected during direct bullet attacks	Composition same as above, designed in Arm Support System.	
Gel Splint- Neck Support	Spinal or Neck injuries requires absolute no movement of neck & back, splinting is essential.	Composition same as above, designed in Neck Support System.	



Product Catalogues



Alone we can do so little; together we can do so much!



Gel Craft Healthcare (P) Limited

WHO GMP Certified & QCI Approved Manufacturing Facility

ISO 9001: 2015 & ISO 13485: 2016

Technology Partner of DRDO (CBRN Ultra Devices)

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