

# Got any Questions?

Don't be shy! E-mail us at [gargcablesandsilicones@gmail.com](mailto:gargcablesandsilicones@gmail.com)



**Garg Cables & Silicones Pvt. Ltd.**

**Head Office : IInd Industrial Area, Near Garg Cotton Mills  
SIRSA-125055 (Hry.), India**

**Tel. : 99961-05060 (Director)**

**Tel. : 98172-77767 (Technical)**

**Mfrs. & Exporters  
Silicone Rupper Compound H.V & L.V.**

The information provided here reflects GCSL's current understanding but does not exempt the user from thoroughly inspecting all supplies upon receipt. GCSL's reserves the right to modify product specifications in line with technological advancements or new developments. It is essential to conduct preliminary tests on our recommendations due to variables in processing conditions, especially when using other companies' raw materials. Users must also verify that they are not infringing on third-party rights and clarify any potential issues. GCSL's recommendations do not imply a guarantee of the product's suitability or fitness for a specific purpose.



**ELASTOSIL®**

## Garg Cables & Silicones Pvt. Ltd. Mfg. Silicone Compounds



## Engineering the Future

with  
Specialized tailor made specialty silicone rubber compounds.

Garg Cables & Silicones Pvt. Ltd.

## We are Manufacturers of Specialty Grades of Silicone Rubber In India.

We offer our customers a complete range of Low and high-voltage grade Silicone Rubber compound for Hollow core Insulator applications & other long Rod Insulators.

We formulate and mix our silicone compound and develop new products for next Generation - all over the world !

We are here to be your one stop solution to cater all your special Silicone Rubber requirements

YOUR TRUSTED MANUFACTURER OF HIGH QUALITY SPECIALITY SILICONE RUBBER.  
YOU TRUST, WE DELIVER.

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### About Us :

Garg Cables and Silicones Private Limited is a leading manufacturer and supplier of advanced Silicone Rubber Compounds, offering innovative solutions for various industries.

Our company Director Mr Madhav Garg, who is a experienced professional in the field of Silicone Rubber Technology.

We take pride in providing our customers with high quality products and our flagship products are NC-150 Low Voltage ,NC-200 High Voltage and NC-300 High Voltage specially formulated compound designed to provide excellent electrical insulation properties and high-temperature resistance. They are widely used in electrical and electronic applications, such as power cables, transformers, and insulators.

At Garg Cables and Silicones Private Limited, we are committed to meeting our customer's needs by providing bespoke solutions and exceptional customer service. Our experienced team of professionals is dedicated to delivering high quality products and technical support to ensure our customer's success.

Providing quality and trust is the core foundations on which we are determined to build this empire.



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**Garg Cables & Silicones Pvt. Ltd.**

An ISO 9001:2015 Certified Company

**GCSL NC 300**

GCSL NC 300 is ready to use peroxide cured compound which is having excellent electrical insulation resistance and dielectric properties. It enables easy processing in both injection and compression molding. Moderate Mooney viscosity enables it to use for HTV injection molding of hollow core insulators and arrestors.

#### Application:-

Due to its goods electrical and hydrophobic properties, GCSL NC 300 is used in manufacturing of high voltage composite insulators, arresters, hollow core insulators upto 765 KVA.

#### Properties:-

<u>General Characteristics</u>	<u>Standard/Method</u>	<u>Unit</u>	<u>Spec.</u>	<u>Typical value</u>
Hardness	ASTMD 2240	ShA	68±7	68
Tensile Strength	ASTMD 412 ISO 37	N/mm <sup>2</sup>	>4	5.2
Elongation at break	ASTMD 642 ISO 37	%	>150	320
Tear Strength	ASTMD 624 B	N/mm	>13	20
Specific gravity	ASTMD 792	g/cm <sup>3</sup>	1.55±0.03	1.54
Dielectric strength	IEC 60243	kV/mm	>18	28
Volume resistivity	IEC 60093	Ohm.cm	>10 <sup>14</sup>	2.5×10 <sup>13</sup>
Tracking resistance	IEC 60587	-	1A4.5	1A4.5
Flammability	IEC 60695-1:2013	-	V0	V0

\*Test specimens were cured at 165° C for 10 mins

These figures are only intended as a guide and should not be used in preparing specifications.

#### Processing:-

GCSL NC 300 can be easily processed with injection molding, compression molding or transfer molding at higher temperatures from 160°C to 170°C.

#### Storage:-

The compound must be kept away from direct sunlight and should be stored below 35°C. Also it has to be kept separate from organic rubbers and cross linkers used in organic rubbers. Storage beyond the data specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

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Manufacturers of : Silicone Rubber Compound Low Voltage and High Voltage Grade

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# Garg Cables & Silicones Pvt. Ltd.

An ISO 9001:2015 Certified Company

## GCSL NC 200

GCSL NC 200 is ready to use peroxide cured compound which is having excellent electrical insulation resistance and dielectric properties. It enables easy processing in both injection and compression molding. Moderate Mooney viscosity enables it to use for HTV injection molding of hollow core insulators and arrestors.

### Application:-

Due to its goods electrical and hydrophobic properties, GCSL NC 200 is used in manufacturing of high voltage composite insulators, arresters, hollow core insulators upto 400 KVA.

### Properties:-

General Characteristics	Standard/Method	Unit	Spec.	Typical value
Hardness	ASTMD 2240	ShA	68±7	68
Tensile Strength	ASTMD 412 ISO 37	N/mm <sup>2</sup>	>4	4.7
Elongation at break	ASTMD 642 ISO 37	%	>150	250
Tear Strength	ASTMD 624 B	N/mm	>13	16
Specific gravity	ASTMD 792	g/cm <sup>3</sup>	1.55±0.03	1.54
Dielectric strength	IEC 60243	kV/mm	>18	22
Volume resistivity	IEC 60093	Ohm.cm	>10 <sup>14</sup>	2.5×10 <sup>13</sup>
Tracking resistance	IEC 60587	-	1A4.5	1A4.5
Flammability	IEC 60695-1:2013	-	V0	V0

\*Test specimens were cured at 165° C for 10 mins

These figures are only intended as a guide and should not be used in preparing specifications.

### Processing:-

GCSL NC 200 can be easily processed with injection molding, compression molding or transfer molding at higher temperatures from 160°C to 170°C.

### Storage:-

The compound must be kept away from direct sunlight and should be stored below 35°C. Also it has to be kept separate from organic rubbers and cross linkers used in organic rubbers. Storage beyond the data specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

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Manufacturers of : Silicone Rubber Compound Low Voltage and High Voltage Grade



## WHO WE ARE -

Garg Cables & Silicones Pvt. Ltd. (GCSL) is a leading manufacturer of customized, tailor-made specialty rubber compounds designed to meet the precise specifications of rubber component manufacturers. Founded by technical and market specialists with over 15 years of techno-commercial experience, GCSL is driven by a commitment to serve the specialty rubber industry with superior quality products and exceptional services. Our expertise and dedication ensure that we deliver solutions that consistently meet and exceed industry standards, catering to the unique needs of our clients.



### Vision

*“To lead the silicone industry with Precision, high quality solutions and extraordinary support.”*

### Mission

*“To be a global benchmark for Innovation, Quality, and Service in silicone rubber and composites.”*

## Engineering the Future

By choosing GCSL, you benefit from our deep industry knowledge, commitment to quality, and customer-focused approach, ensuring that your specific needs are met with excellence and reliability.

### Customer-Oriented Approach:

GCSL is managed by professionals who have over a decade of experience in exceeding customer expectations by providing maximum value and tailored products and services. Our commitment to customer centricity is the cornerstone of the GCSL team.

### Hands-On Experience with Products and Market:

The extensive experience of the GCSL team allows us to deeply understand market demands and customer needs. This insight enables us to develop and offer the most suitable products and services in a cost-effective and uncompromised manner, facilitating faster project-to-business conversion.

### Quality & Consistency:

GCSL is dedicated to developing and manufacturing high-quality, consistent products that meet customized specifications. Our stringent quality control processes ensure that every product we deliver adheres to the highest standards.

### Technical Services:

Our team of qualified and experienced professionals works closely with customers on projects, offering technical support related to products, processes, and testing. This collaboration ensures that our solutions are effective and reliable.

### Flexibility:

At GCSL, decision-making is entrusted to professionals who possess a deep understanding of the market and customer needs. This allows us to make important business decisions quickly and efficiently. We can also implement customer-specific methods or processes for enhanced customization.

### Learning Organization:

GCSL is committed to developing products that meet both current and future industry needs. Through continuous learning and upgrading processes, our team constantly explores the best technologies for R&D and manufacturing. This approach ensures that we stay ahead in innovation and quality.



### GCSL NC 150

GCSL NC 150 is ready to use peroxide cured compound which is having excellent electrical insulation resistance and dielectric properties. It enables easy processing in both injection and compression molding. Moderate Mooney viscosity enables it to use for HTV injection molding of hollow core insulators and arrestors.

### Application:-

Due to its good electrical and hydrophobic properties, GCSL NC 150 is used in manufacturing of Low Voltage composite insulators, arresters, hollow core insulators upto 33 KVA

### Properties:-

General Characteristics	Standard/Method	Unit	Spec.	Typical value
Hardness	ASTMD 2240	ShA	68±7	68
Tensile Strength	ASTMD 412 ISO 37	N/mm <sup>2</sup>	>4	4.2
Elongation at break	ASTMD 642 ISO 37	%	>150	180
Tear Strength	ASTMD 624 B	N/mm	>13	13
Specific gravity	ASTMD 792	g/cm <sup>3</sup>	1.55±0.03	1.54
Dielectric strength	IEC 60243	kV/mm	>18	19
Volume resistivity	IEC 60093	Ohm.cm	>10 <sup>14</sup>	2.5×10 <sup>13</sup>
Tracking resistance	IEC 60587	-	1A4.5	1A3.5
Flammability	IEC 60695-1:2013	-	V0	V0

\*Test specimens were cured at 165° C for 10 mins

These figures are only intended as a guide and should not be used in preparing specifications.

### Processing:-

GCSL NC-150 can be easily processed with injection molding, compression molding or transfer molding at higher temperatures from 160°C to 170°C.

### Storage:-

The compound must be kept away from direct sunlight and should be stored below 35°C. Also it has to be kept separate from organic rubbers and cross linkers used in organic rubbers. Storage beyond the data specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

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# Our Mission towards Sustainability



At Garg Cables & Silicones Pvt. Ltd. (GCSL), our commitment to sustainability is driven by core principles that guide our operations, decisions, and culture:

## Safety

Safety is our top priority at GCSL. We ensure the well-being of our team through:

- Comprehensive safety protocols
- Ongoing training programs
- A culture of vigilance

Every employee is empowered to identify hazards, prioritize safety, and contribute to a zero-incident workplace, ensuring a safe environment for all.

## Environment

Environmental responsibility is fundamental to our operations. GCSL is dedicated to minimizing our impact on the planet through:

- Sustainable practices
- Resource efficiency
- Eco-friendly technologies

From reducing emissions to conserving resources, we are committed to leaving a positive legacy for future generations and protecting our environment.

## Partnership

We believe in the power of collaboration. At GCSL, we cultivate strong partnerships with:

- Customers
- Suppliers
- Stakeholders

These relationships are built on trust, transparency, and mutual success. Together, we innovate, solve challenges, and deliver value, achieving our shared goals through effective collaboration.

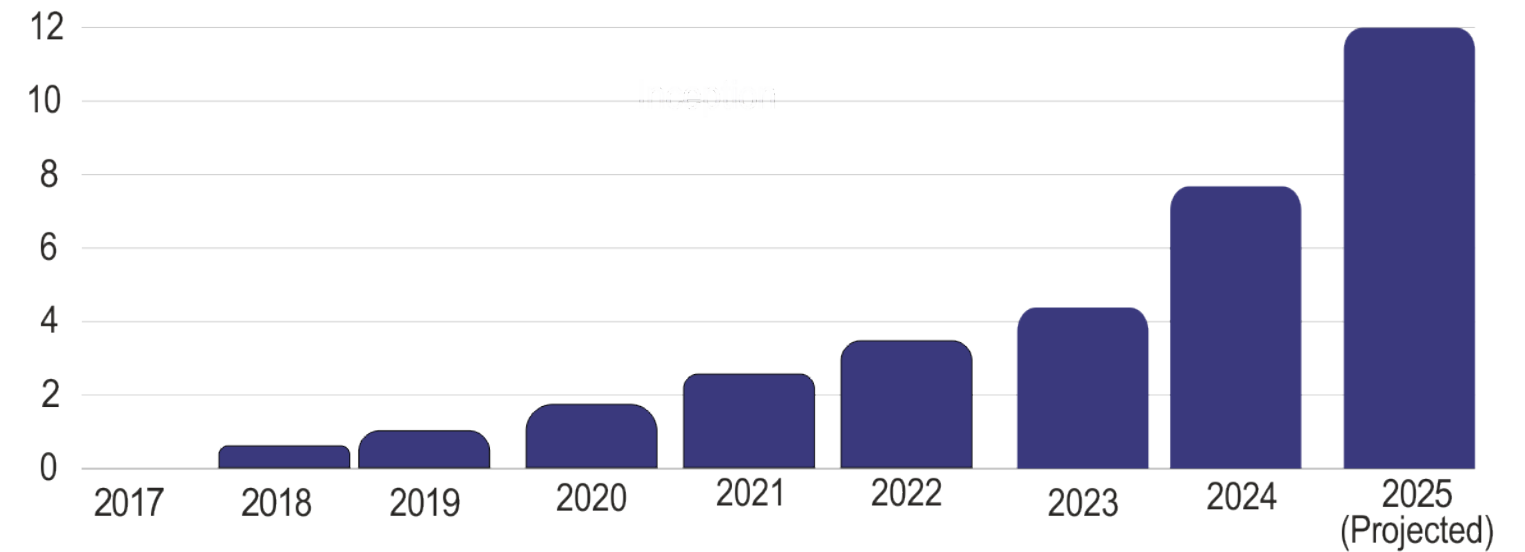
## Accountability

Accountability is ingrained in everything we do at GCSL. We hold ourselves to the highest standards of integrity by:

- Taking ownership of our actions, decisions, and outcomes
- Maintaining transparency and honesty
- Continuously striving for improvement

Through these practices, we aim for excellence and earn the trust of our stakeholders, ensuring our actions reflect our values and commitments.

# Our Story



We are one of the leading Manufacturers of Low Voltage & High Voltage Grade Silicon Rubber Compound. we have been supplying the material to various insulator manufacturer with good track record. our factory is equiped with 20,000 Sq. Ft. area we have seperate Raw material storage and seperate finished Product storage area. We choosing the raw material Supplier with intence care, our staff is highly qualified trained and has educated core knowledge of this product.

Quality has been the main area of focus since the start of our production.



## Manufacturing Process of GCSL

At Garg Cables & Silicones Pvt. Ltd (GCSL), our production and manufacturing process is designed to deliver exceptional quality and consistency in every batch. Leveraging **state-of-the-art equipment** and **advanced technologies**, our facilities are equipped to handle the complex requirements of silicone rubber compounds and high voltage insulators. Our **CSOA25m® Homogenization Process** ensures that each product meets stringent specifications, providing unmatched reliability and performance. Our dedicated team of skilled professionals meticulously oversees every step of the manufacturing process, from raw material selection to final inspection, ensuring that our products not only meet but exceed industry standards. With a strong focus on **efficiency, precision, and sustainability**, GCSL is committed to providing superior products that support the success of our customers across various industries.

## Innovation & Research Hub @ GCSL

The Innovation and Research (I&R) hub at Garg Cables & Silicones Pvt. Ltd.(GCSL) is a dedicated team focused on exploring **new technologies** developing innovative products, improving existing formulations, and solving technical challenges related to silicone rubber compounds. This team is a strategic asset, driving innovation, **differentiation**, and **value creation** for the company through the development of novel products, technologies, and solutions in the field of silicone rubber compounds.

## Services offered by GCSL



### ON-SITE SUPPORT & TROUBLESHOOTING FOR MOLDING AND EXTRUSION PROCESS

GCSL provides on-site technical assistance and troubleshooting services to help customers optimize their injection molding processes for silicone rubber compounds. Our experts can assist with resolving several common problems that arise during the process such as -

- **Short Shot** A short shot occurs when the mould cavity is not completely filled, resulting in an incomplete injection-moulded part.
- **Excess Flashing** Flashing occurs when the rubber material leaks between the mould surfaces along the parting line, affecting the surface finish and potentially causing thick flash cracks.
- **Warpage** Warpage is the distortion of the moulded rubber part during the cooling process, leading to folding, twisting, bending, or bowing.
- **Brittleness** Brittleness can result from shorter molecular chain lengths, impairing the physical integrity of the moulded part and causing cracks or breakages.
- **Flow Lines** Flow lines are caused by the rubber shot moving at low speeds and encountering high-temperature surfaces near the nozzle, leading to pigment separation.
- **Air Entrapment** Air entrapment in silicone rubber can occur when the two parts of the material are mixed together, causing bubbles to form in the finished mold or casting
- **Crack Generation** Crack generation in silicone rubber may occur due to mechanisms such as thermal stresses, tensile stresses, overloading, restraint or chemical reactions.
- **Mold sticking during de-molding** in silicone rubber may occur due to non-optimal packaging of mold, rough surface of mold, imbalanced filling, incorrect gate seal time, or improper mold or material temperature.

Our experts help you with solving these issues and more with the help of our state of the art Innovation and Research Hub.

### PRODUCT DEVELOPMENT SERVICES

We assist customers in bringing new silicone rubber products to market with our extensive product development services, which include:

- Concept ideation
- Material selection
- Formulation development
- Prototyping
- Testing and validation Our team at Innovation and Research Hub collaborates closely with customers to customize products according to specific requirements and applications.

### SUPPORT IN MOLD AND MACHINE DESIGN

GCSL offers expertise in mold design and machine selection for silicone rubber injection molding and other manufacturing processes. Our support includes:

- Recommendations for mold design features
- Material compatibility guidance
- Gating and venting solutions
- Cooling system design
- Automation solutions to optimize production efficiency and quality

### SUPPORT IN POLYMER INSULATOR MANUFACTURING

Leveraging our expertise in silicone rubber compounds, GCSL provides specialized support to manufacturers of polymer insulators used in electrical and power distribution applications. Our services include:

- Material selection
- Formulation optimization
- Process support
- Quality assurance
- Troubleshooting to ensure the performance and reliability of polymer insulators

### TRAINING & EDUCATION PROGRAMS

GCSL offers comprehensive training programs, workshops, and seminars to educate customers and industry professionals about silicone rubber technology. Topics covered include:

- Injection molding best practices
- Material properties
- Application-specific considerations These programs can be conducted on-site or at our facilities.

### TECHNICAL CONSULTATION SERVICES

Our technical consultation services are designed to assist customers with specific challenges or projects related to silicone rubber compounds. We offer:

- Material testing and analysis
- Failure investigation
- Root cause analysis
- Recommendations for corrective actions or improvements

### CUSTOMIZED SOLUTIONS AND SERVICES

GCSL provides tailored solutions and services to meet the unique needs and requirements of individual customers. This includes:

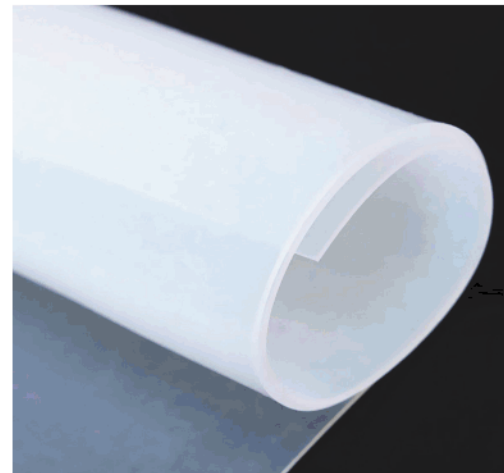
- Collaborative problem-solving
- Co-development projects
- Ongoing support to address customer-specific challenges and opportunities



## PLATINUM CURED SILICONE COMPOUNDS

The fast curing mechanism of the platinum catalyst allows for thicker section parts to be cured more quickly at the same molding temperatures as traditional peroxide systems. Additionally, thicker section parts can be cured at lower temperatures with this method. Unlike peroxide-cured systems, platinum cure systems produce no peroxide residues, making them ideal for use in food and medical applications. This curing process results in materials with excellent hot tear strength, facilitating the demolding of parts with complex geometries and undercuts. However, platinum-cured materials are more sensitive to catalyst poisons than peroxide-cured ones. To address this, we offer a three-component system and formulation guide designed to extend the shelf life of the mixed compound, ensuring optimal performance and usability.

Durometer Hardness	Shore A	30-70
Specific Gravity	g/cm <sup>3</sup>	1.07-1.2
Tensile Strength	mpa	3-9
Elongation	%	300-900
Tear Strength	N/mm	10-40
Compression Set	%(22h @ 175°C)	10-30
Approvals		FDA



**Applications - Pharmaceutical Industry, Biotechnology sector, Injectables & Food and Beverage Products**

## LIQUID SILICONE RUBBER (LSR)

Liquid Silicone Rubber (LSR) is a versatile material known for its exceptional durability, flexibility, and heat resistance. At Calibre Specialty Elastomers, our LSR formulations are designed to meet the stringent requirements of various industries, including automotive, medical, and electronics. LSR's unique properties make it ideal for producing complex, high-precision parts through injection molding processes. Its ability to withstand extreme temperatures, resist chemicals, and maintain stability over time ensures reliable performance in demanding applications. Our LSR solutions provide consistent quality and superior performance, making them a preferred choice for innovative and high-performance silicone rubber products.

Durometer Hardness	Shore A	70-80
Specific Gravity	g/cm <sup>3</sup>	1.5-1.6
Tensile Strength	mpa	4-8
Elongation	%	150-800
Tear Strength	N/mm	9-18
Dielectric strength	kV/mm (2mm thick)	20



**Applications - Transmission and distribution, power cables and cable joints**

# Systems & Quality Assurance Center @ GCSL

At GCSL, we conduct rigorous in-house routine tests on silicone rubber compounds using advanced laboratory equipment, standardized test methods, and stringent quality control procedures. Here's an overview of our approach:

### Test Planning & Protocol Development

Before conducting any tests, we develop a comprehensive test plan outlining the specific tests to be performed, the testing equipment and methods to be used, acceptance criteria, and testing frequency. This plan ensures consistency and standardization across all routine tests.

### Material Sampling & Preparation

Representative samples of silicone rubber compounds are collected from each batch or production run. These samples are prepared according to standardized procedures, including molding or extruding into test specimens of the required shape and size.

### Testing equipment setup & calibration

All testing equipment is properly set up, calibrated, and maintained according to manufacturer specifications and relevant standards. This ensures the accuracy and reliability of test results.

### Routine Tests conducted

We conduct a range of routine tests on silicone rubber compounds to assess their mechanical, thermal, electrical, and chemical properties. These tests include:

- **Tensile Strength, Tear Strength, and Elongation at break Testing:** Assessing the strength and flexibility of the material.
- **Hardness Testing:** Measuring the material's resistance to indentation.
- **Specific Gravity Testing :** Measuring the mass per unit volume of the material
- **Rheology and Viscosity Testing:** Analyzing the curing & flow properties of the material.
- **Dielectric Testing:** Evaluating the material's electrical insulation properties.
- **Tracking and Erosion Testing:** Checking the material's resistance to surface degradation.
- **Volume Resistivity Testing:** Measuring the material's resistance to electrical condition.

### Data analysis and reporting

Test results are analyzed and compared against established acceptance criteria or specifications. Detailed test reports document the findings, and any deviations from expected results are investigated. Corrective actions are implemented as necessary.

### Quality control and assurance

Quality control measures are implemented throughout the testing process to ensure accuracy, repeatability, and traceability of test results. This includes regular calibration of equipment, adherence to standardized testing procedures, and participation in proficiency testing programs.

# GCSL Focus Areas

GCSL ensures that we deliver the highest quality and most reliable products tailored to meet the specific

needs and standards of our clients.

## Our Products

### Specialty Silicone Compounds:

GCSL specializes in the development of high-performance specialty silicone compounds, tailored to meet the stringent requirements of various industries.

### Fluorosilicone Compounds:

We produce advanced fluorosilicone compounds known for their excellent resistance to fuels, oils, and chemicals, making them ideal for demanding applications.

### General Silicone Compounds:

GCSL specializes in silicone compounds meticulously customized to meet specific customer requirements and process conditions.



## Industries Served

- **Transmission & Distribution:** We provide specialty compounds for the transmission and distribution sector, enhancing the performance and longevity of electrical insulators and related components.
- **Automotive:** Our compounds are designed to meet the high-performance standards of the automotive industry, providing solutions for everything from engine components to interior seals.
- **Aerospace:** GCSL's materials are engineered to withstand the rigorous demands of aerospace applications, ensuring safety and reliability in flight-critical components.
- **Wire & Cables:** Our silicone and fluorocarbon compounds are used in the production of high-quality, durable wire and cable insulation that can endure harsh environments and extreme temperatures.
- **Oil & Gas:** GCSL's compounds are designed to withstand the harsh conditions of the oil and gas industry, offering superior performance in seals, gaskets, and other critical components.

## NON POST CURE SILICONE

Non-post cure silicones are designed to minimize processing costs associated with silicone product manufacturing. Typically, silicones undergo post-curing to enhance their final properties and reduce the blooming of peroxide volatiles formed during curing. However, non-post cure silicones achieve these benefits without the additional post-curing step. These silicones feature a high crosslink density, providing outstanding resistance to compression set, making them exceptionally suitable for sealing applications. This streamlined processing not only reduces costs but also ensures superior performance and durability in the final product.



**Applications - Extruding profiles, pressure less curing and Rollers**

Durometer Hardness	Shore A	40-80
Specific Gravity	g/cm <sup>3</sup>	1.1-1.4
Tensile Strength	mpa	6-8
Elongation	%	150-450
Tear Strength	N/mm	8-15
Compression Set	%(22h @ 175°C)	12-25

## GENERAL PURPOSE SILICONE COMPOUNDS

General purpose silicone rubber compounds are meticulously customized to meet specific customer requirements and process conditions. These versatile compounds exhibit excellent physical and mechanical properties, including robust high and low temperature resistance and superior aging resistance. They are engineered to perform reliably over a broad temperature range, from -60°C to 200°C, ensuring prolonged use and durability in diverse applications.



**Applications - Food Processing and Food Storage**

Durometer Hardness	Shore A	20-80
Specific Gravity	g/cm <sup>3</sup>	1.12-1.26
Tensile Strength	mpa	5-7
Elongation	%	200-600
Tear Strength	N/mm	8-16
Compression Set	%(22h @ 175°C)	25-45

# Understanding Silicone Industry

## About Silicone

Silicone, a highly versatile polymer, is integral to numerous industries worldwide due to its unique properties, such as exceptional heat resistance and flexibility. It is indispensable in electronics for protecting components, in Insulation industry for Transmission and Distribution, in the automotive industry for gaskets, seals, and hoses, and in the medical field for implants and prosthetics due to its biocompatibility. In construction, silicone serves as an effective sealant and adhesive, preventing leaks and ensuring durability. The aerospace sector relies on silicone for components that must perform under extreme conditions. Ongoing research continues to expand and innovate silicone's applications, solidifying its role as a critical material across diverse industries.

## Key Properties of Silicone

### Thermal Stability:

Silicones can withstand a broad range of temperatures, from cryogenic lows to highs exceeding 300°C. This remarkable thermal stability makes them essential for applications in automotive engines, electronics, and aerospace components, where maintaining performance under extreme temperatures is crucial.

### Dielectric Properties:

As excellent electrical insulators, silicones are invaluable in electronics, electrical insulation, and high-voltage applications. Their dielectric properties ensure safety and efficiency in electrical and electronic components.

### Water Repellency:

As hydrophobic materials, silicones effectively repel water. This water-repellent property makes them perfect for waterproofing and moisture barrier applications, including sealants, caulks, and personal care products like waterproof cosmetics, enhancing longevity and performance.

### Biocompatibility:

Medical-grade silicones are biocompatible and non-toxic to living tissues, making them suitable for medical implants, catheters, and other healthcare products. Their safe interaction with the human body ensures their widespread use in the medical field.

### Flexibility and Elasticity:

Silicones are elastomeric materials, capable of stretching and returning to their original shape without permanent deformation. This flexibility and elasticity make them ideal for applications such as seals, gaskets, and soft-touch components, providing resilience and durability.

### Chemical Inertness:

Silicones are highly resistant to a wide array of chemicals, including acids, bases, solvents, and oils. This chemical inertness makes them ideal for use in environments with harsh chemical exposure, such as laboratory equipment, seals, and gaskets, ensuring long-lasting durability and reliability.

### UV Stability:

Silicones exhibit strong resistance to ultraviolet (UV) radiation, making them suitable for outdoor applications such as coatings, sealants, and encapsulants. This UV stability ensures long-term performance and durability in exposed environments.

### Transparency and Clarity:

Silicones can be formulated to be transparent and optically clear, making them ideal for applications where visual clarity is essential, such as optics, lenses, and electronic displays, providing clear and precise visual performance.

## HIGH TEMPERATURE SILICONE

While general-purpose silicone compounds offer reliable temperature resistance up to 200°C, high-temperature silicone rubber materials are engineered to withstand continuous exposure to temperatures as high as 300°C. They can even tolerate temperature peaks above 300°C for brief periods, although sustained operation at these extreme temperatures is not recommended. Prolonged exposure to high temperatures can cause the silicone to harden and become increasingly brittle, leading to a loss of its elastomeric properties. These high-temperature silicones are ideal for demanding applications that require superior thermal resilience, ensuring durability and performance under extreme conditions.



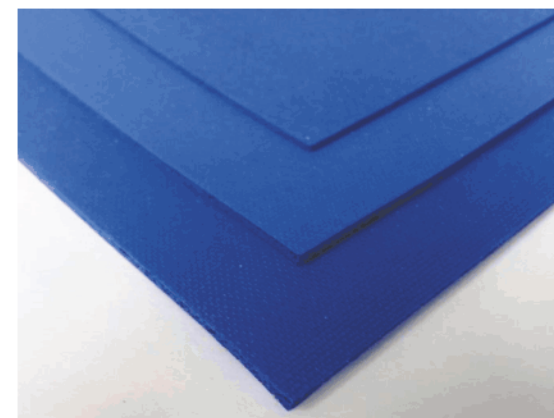
**Applications - Wire and cable (steel plant and mines), Automotive industry**

Durometer Hardness	Shore A	40-70
Specific Gravity	g/cm <sup>3</sup>	1.1-1.2
Tensile Strength	mpa	6.6-8
Elongation	%	200-450
Tear Strength	N/mm	12-20
Compression Set	%(22h @ 175°C)	20-40

## FLUOROSILICONE RUBBER

Fluorosilicone rubber stands out with significantly greater chemical resistance compared to standard silicone. It excels in resisting hydrocarbon fluids such as petrol and diesel, as well as various solvents, making it ideal for environments where exposure to harsh chemicals is common. Fluorosilicone is particularly suited for applications requiring a broad temperature range, from -60°C to +225°C, where conventional silicone fails to provide adequate chemical resistance. This unique combination of properties ensures reliable performance in demanding conditions, making fluorosilicone rubber the material of choice for critical applications.

Durometer Hardness	Shore A	40-80
Specific Gravity	g/cm <sup>3</sup>	1.38-1.65
Tensile Strength	mpa	6-9
Elongation	%	150-500
Tear Strength	N/mm	15-35
Compression Set	%(22h @ 175°C)	10-40



**Applications - Oil gaskets, Automotive industry, fuel systems at elevated temperatures, resistance to ozone, UV radiation and weathering, Nuclear gaskets**

# High Consistency Rubber

*Stretching the boundaries of science*

High Consistency Rubber (HCR) silicone rubber is a specialized type of silicone elastomer that undergoes a curing process at elevated temperatures to achieve its final properties. This curing process imparts exceptional heat resistance, flexibility, and durability to the material, making it ideal for a broad spectrum of applications across various industries.

**The Applications include the following -**

## Automotive Seal and Gaskets

HCR silicone rubber is perfect for automotive seals and gaskets, offering excellent thermal stability and resistance to oil and fuel, ensuring reliable performance in engine and transmission systems.

## Electrical Insulation

The material's outstanding dielectric properties make it suitable for electrical insulation, providing safe and efficient performance in high-voltage and electronic applications.

## Medical Devices

Biocompatible grades of HCR silicone rubber are used in medical devices, including implants, tubing, and catheters, ensuring safety and compatibility with the human body.

## Food Processing

HCR silicone rubber is used in food processing equipment and seals, complying with food safety regulations due to its non-toxic and heat-resistant nature.

## Aerospace Components

The material's ability to withstand extreme temperatures and harsh conditions makes it ideal for aerospace components, ensuring reliability and performance in demanding environments.

## Hydraulic & Pneumatic systems

HCR silicone rubber's flexibility and durability make it suitable for seals and gaskets in hydraulic and pneumatic systems, providing long-lasting performance under pressure.

## Outdoor & Harsh Environments

With excellent UV and weather resistance, HCR silicone rubber is perfect for outdoor applications, maintaining its properties even in harsh environmental conditions.

## Consumer Products

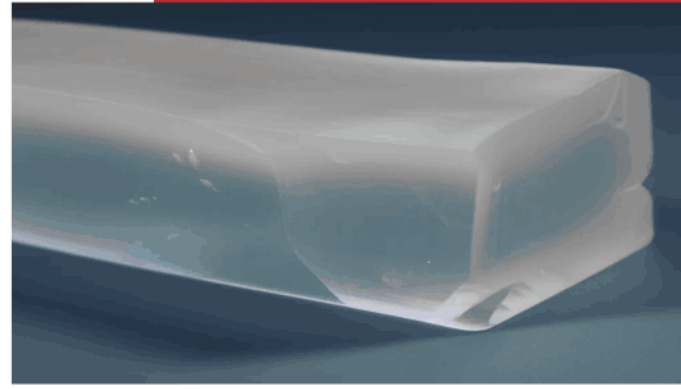
The material's versatility and safety make it ideal for a variety of consumer products, from kitchen utensils to baby care items, ensuring durability and user safety.

## Textile Coating

HCR silicone rubber is used in textile coatings to impart water repellency, durability, and flexibility, enhancing the performance and lifespan of fabrics.

## Construction Sealants

The material's strong adhesive properties and flexibility make it suitable for construction sealants, providing long-lasting protection against leaks and structural movement.



# HIGH STRENGTH SILICONE COMPOUNDS

These high strength silicone compounds exhibit significantly greater elongation and tear strength compared to general purpose silicones. They are versatile, suitable for molding, extrusion, and calendaring processes. The resulting products demonstrate superior resistance to abrasion and fatigue, making them ideal for demanding applications. High strength silicones are particularly valuable for producing molded components with intricate shapes or for applications requiring enhanced endurance properties, ensuring reliability and longevity in challenging environments.



**Applications - Transmission & Distribution, Automotive Sector**

Durometer Hardness	Shore A	30-70
Specific Gravity	g/cm <sup>3</sup>	1.12-1.22
Tensile Strength	mpa	8-11
Elongation	%	300-900
Tear Strength	N/mm	25-40
Compression Set	%(22h @ 175°C)	20-45

# CONDUCTIVE SILICONE

While silicones are renowned for their excellent electrical insulation properties, CSE has developed a range of specialized grades featuring exceptional electrical conductivity. These electrically conductive compounds can be molded, extruded, or calendered, making them highly versatile for various manufacturing processes. They are frequently utilized in electromagnetic shielding applications and for preventing the buildup of static charge, ensuring both functionality and safety in electronic and industrial environments.

Durometer Hardness	Shore A	30-70
Specific Gravity	g/cm <sup>3</sup>	1.07-1.2
Tensile Strength	mpa	3-9
Elongation	%	300-750
Tear Strength	N/mm	10-40
Compression Set	%(22h @ 175°C)	10-30



**Applications -**

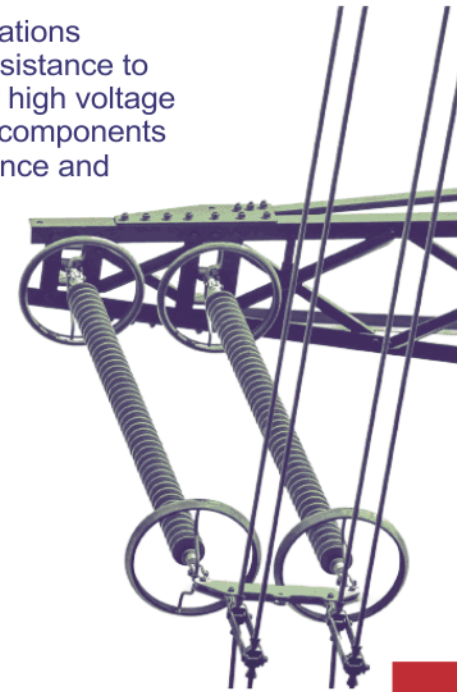
**In automotive applications; plug boots, ignition wires, and fuel injector seals.**

**In electronics; conductive gaskets, EMI/RFI shielding, and thermal interface materials.**

# OUR PRODUCT RANGE

## INSULATING RUBBER SILICONE

Our range of insulating silicone rubber grades is specifically designed for applications demanding superior electrical insulation. These materials exhibit exceptional resistance to combustion arc tracking and environmental degradation, making them ideal for high voltage and power transmission equipment. They are perfectly suited for use in critical components such as insulators, surge arresters, and casing pipes, ensuring reliable performance and longevity in demanding conditions.



**Applications - Transmission and distribution, power cables and cable joints**

Durometer Hardness	Shore A	70-80
Specific Gravity	g/cm <sup>3</sup>	1.5-1.6
Tensile Strength	mpa	4-6
Elongation	%	150-350
Tear Strength	N/mm	10-20
Dielectric strength	kV/mm (2mm thick)	20

## ANTI TRACKING SILICONE COMPOUNDS

Anti-Tracking Silicone Compound is engineered to deliver exceptional performance in high-voltage electrical applications. At Calibre Specialty Elastomers, our anti-tracking silicone formulations provide superior electrical insulation, preventing the formation of conductive paths on the surface of insulators and bushings. This ensures the reliability and longevity of electrical components, even under harsh environmental conditions. Our compounds are designed to resist environmental degradation, such as UV radiation, moisture, and pollutants, making them ideal for outdoor and industrial use. With a focus on quality and consistency, our anti-tracking silicone compounds help enhance the safety and efficiency of electrical power systems, supporting the integrity and stability of power transmission networks.



**Applications - Extruding profiles, pressure less curing and Rollers**

Durometer Hardness	Shore A	40-80
Specific Gravity	g/cm <sup>3</sup>	1.1-1.4
Tensile Strength	mpa	6-8
Elongation	%	150-700
Tear Strength	N/mm	10-24
Compression Set	%(22h @ 175°C)	12-25

# HCR in Transmission & Distribution Industry

High Consistency Rubber (HCR) silicone rubber plays crucial roles in the transmission and distribution industries, particularly in electrical power systems. Here's how HCR silicone rubber enhances these applications:

### Insulators & Bushings

HCR silicone rubber is utilized in manufacturing in sulators and bushings for electrical power systems. Its exceptional heat resistance ensures reliable performance even in environments with elevated temperatures, providing crucial insulation and stability.



### High Voltage Cable Accesories

HCR silicone rubber is essential for high-voltage cable accessories such as terminations and joints. These accessories provide critical insulation, sealing, and mechanical protection for cable connections, ensuring the safe and reliable transmission of electrical energy.



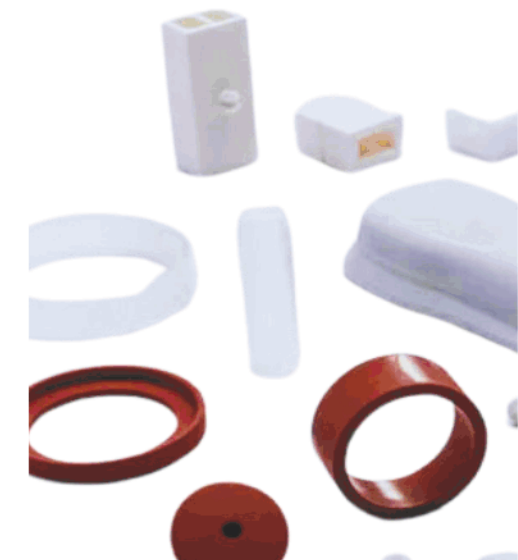
### Insulating Sleeves and Covers

HCR silicone rubber is used to manufacture insulating sleeves and covers, which offer protection against electrical shock and prevent voltage leaks. This enhances the safety and reliability of transmission and distribution systems, safeguarding both equipment and personnel.



### Seals and Gaskets

In electrical enclosures, switchgear, and control panels, HCR silicone rubber is used for manufacturing seals and gaskets. These components protect against dust, moisture, and contaminants, ensuring the integrity of electrical equipment and preventing failures.



# HCR in Composite Long Rod Insulators

High Consistency Rubber (HCR) used in composite long rod insulators offers an array of **exceptional properties**, making it an ideal choice for high-performance applications:

- **High Heat Resistance:** Maintains performance integrity under extreme temperatures.
- **Excellent Flexibility and Elasticity:** Ensures durability and adaptability in various environmental conditions.
- **Hydrophobicity:** The surface of silicone rubber maintains a high level of hydrophobicity even under severe environmental conditions. If reduced, the surface's hydrophobic properties recover in less than 12 hours, as the silicone rubber continuously emits silicone oil molecules. This thin layer of silicone oil provides long-lasting protection against leakage currents and flashovers, significantly increasing power supply reliability in industrial, coastal, desert regions, and railways.
- **Superior Durability:** Resistant to wear and tear, extending the lifespan of the insulator.
- **Outstanding Electrical Insulation:** Provides excellent insulation properties, crucial for high-voltage applications.
- **Resistance to Weathering and UV Radiation:** Withstands harsh environmental factors, ensuring longevity and stability.
- **Ease of Processing:** Facilitates efficient manufacturing of complex shapes and designs.

## Key Features and Benefits

The material's outstanding dielectric properties make it suitable for electrical insulation, providing safe and efficient performance in high-voltage and electronic applications.

- **Leakage Currents:** Silicone insulators exhibit significantly lower leakage current levels compared to porcelain, with typical values being <1 mA for silicone versus 10 mA for porcelain. This dramatically reduces the risk of flashovers, enhancing product reliability and minimizing power grid disturbances.
- **Low Surface Energy:** The low surface energy of silicones reduces the adhesion of contaminants such as dust, dirt, and pollutants. This feature helps maintain the cleanliness of the insulator surface, minimizing the risk of surface tracking and electrical discharge.
- **Resistance to Environmental Factors:** Silicones exhibit exceptional resistance to moisture, UV radiation, extreme temperatures, and pollutants. This ensures the long-term stability and reliability of the insulator, even in the harshest outdoor conditions.
- **High Flashover Resistance in High Pollution:** The inherent hydrophobicity of silicone provides enduring protection against leakage currents and flashovers, even in highly polluted environments.
- **Good Impact and Shock Resistance:** The flexibility of silicone insulating materials reduces the risk of breakage during transport and installation, and instances of failure due to vandalism are rare.



## How Elastosil Silicone Rubber Compounds Improve the Quality of Insulators

### Ease of Processing

Elastosil silicone rubber compounds are engineered for effortless processing and molding, allowing the creation of complex shapes and designs for polymer insulators. This ensures manufacturers can produce insulators with precise dimensions, uniform properties, and consistent quality, meeting the stringent requirements of various applications and standards.

### Uniform Properties

Manufactured with precise formulations and strict quality control measures, Elastosil silicone rubber compounds ensure uniformity in essential properties such as hardness, tensile strength, elongation, and specific gravity. This consistency enables the production of end products with predictable and reliable performance characteristics, tailored to meet the specific demands of their applications.

### Reliable Performance

The consistent formulation of elastosil silicone rubber guarantees stable performance of end products over time and under various operating conditions. Whether for electrical insulation, weather resistance, mechanical strength, or chemical compatibility, products made with elastosil silicone rubber consistently meet or exceed performance expectations, resulting in enhanced product quality and increased customer satisfaction.

### Compatibility & Integration

The reliable material properties of Elastosil silicone rubber compounds facilitate seamless integration with other components or materials in complex assemblies or systems. Whether for bonding, sealing, encapsulating, or molding, end products achieve optimal performance and functionality when using elastosil silicone rubber compounds, which consistently meet the required specifications and performance criteria.