TAILOR-MADE SILICONE SOLUTIONS



FORMULATION OF SILICONE ELASTOMERS WITH ROOM-TEMPERATURE PLATINUM-CATALYSED ADDITION CURE: SILICONE RESINS AND GELS, RTV-2

Technical Application Catalogue

October 2026



OVER 30 YEARS OF EXCELLENCE

Since 1995, we have developed innovative solutions, rigorously controlling every process through substantial investment in independent production capabilities, which deliver:

On-time deliveries

through meticulous planning of raw material purchases.

Products

Bringing freshly manufactured materials to market for higher quality.

Quality

complete control of the supply chain.

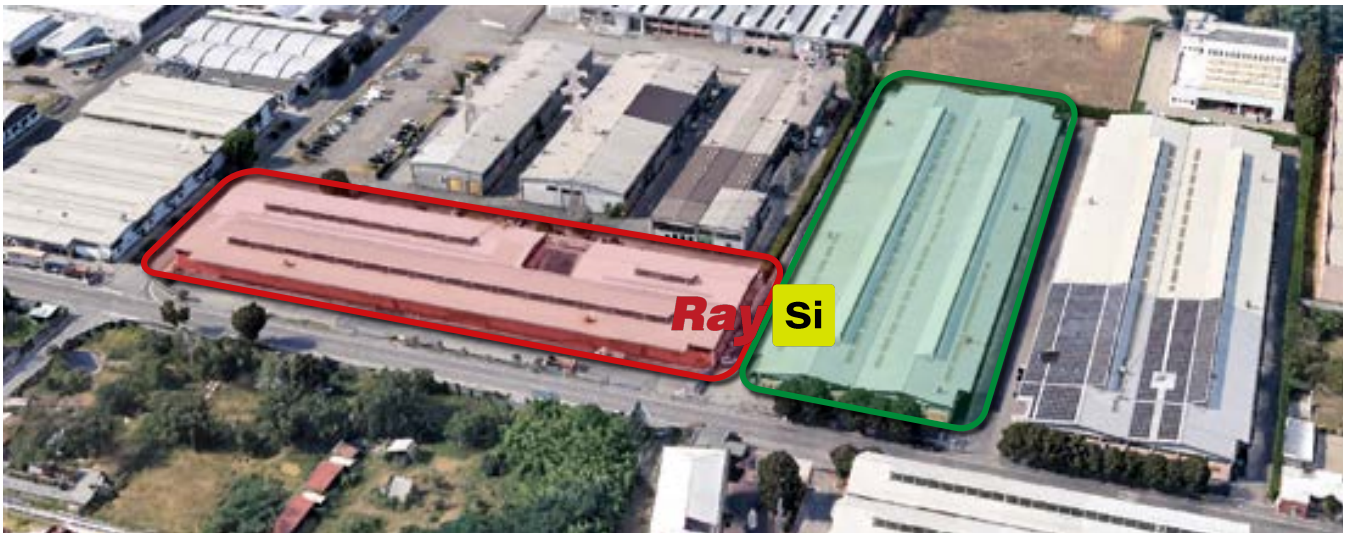
Expertise

in organisation and production, supporting long-term business growth with a particular focus on sustainability.

HEADQUARTERS

— Offices, warehousing, logistics

— Laboratories and production



QUALITY, SAFETY AND THE ENVIRONMENT

We are proud to continue maintaining our ISO certifications, which demonstrate our ongoing commitment to quality and reliability, while respecting the environment and ensuring stakeholder safety. These achievements result from rigorous checks and a systematic approach to ensuring that every product leaving our plant meets the highest international standards.

ISO 9001:2015
Quality Management Systems. Policies, processes and procedures for continuous performance improvement.

ISO 14001:2015
Environmental Management Systems. We are committed to continuously improving our performance while respecting the environment.

ISO 45001:2018
Occupational Health and Safety Management Systems. We protect

our employees by reducing risks and improving safety, health and wellbeing.

TRANSPARENT SUSTAINABILITY

Our commitment to reducing environmental impact, improving working conditions and promoting ethical practices throughout our supply chain is assessed annually and made public through EcoVadis, a leading provider of corporate social responsibility ratings.

LOOKING TO THE FUTURE

After more than thirty years, we look to the future with enthusiasm and determination. We recognise the crucial role AI already plays in our daily work and its potential to further support business development, enabling us to keep innovating and evolving, listening to our customers and investing in our people, who remain the true driving force of our company.

THANK YOU

Our success is down to those who believed in us and continue to do so: employees, customers, suppliers and partners. Without your support, this long journey would neither have been possible nor be able to continue. We invite you to explore this catalogue and discover our latest developments and the projects that excite us for the future.

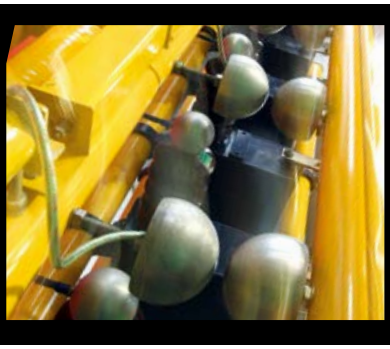
With gratitude

FONDAZIONE Casa della Carità ANGELO ABRIANI

DOING OUR PART

We support the Fondazione Casa della Carità “Angelo Abriani”, an open house that listens to the most disadvantaged, through the “Siamo di Casa” programme.

We believe that each of us walks a fine line, where it is easy to lose balance and fall, and that everyone deserves helping hands and strong arms to help them stand again. Joining the programme is our practical way of showing our support for the many vulnerable people welcomed by Casa della Carità. This support extends to everyone in need, regardless of faith, ethnicity or gender, and our choice is independent of the organisation’s religious identity.





FORMULATION & COMPOUNDING COMPANY

HIGH-PERFORMANCE SILICONE SOLUTIONS

RaySi is the Raytech division specialising in the formulation of platinum-cured RTV-2 silicone systems, designed to meet the needs of modern industry.

The range includes two-component silicone resins, gels and rubbers developed for the protection, insulation and encapsulation of electrical, electronic and industrial components. Every formulation is developed to meet specific application requirements, ensuring high performance, ease of use and consistent quality over time.

180 **DEGREES**
Exceptional long-term thermal resistance

15 **MINUTES**
Average **curing time**







SILICONE SYSTEMS

RaySi formulations provide high levels of component protection against moisture, dust, chemicals, vibration and thermal stress, maintaining excellent dielectric and elastic properties over time. The silicone structure accommodates expansion and mechanical stress without stiffening the material, helping to improve system reliability and service life.

Easy dispensing and rapid, controlled curing make RaySi formulations suitable for numerous sectors, from industry and energy to electrical installations and electronics, delivering high performance even in complex applications.

FROM THE LABORATORY TO YOUR APPLICATION

Drawing on its experience in developing technical materials, RaySi supports customers in creating reliable solutions, from raw material selection to the design of customised formulations.

Working side by side with customers, combined with flexible production and in-depth materials knowledge, enables tailored solutions fully integrated with specific application requirements.

Scientific expertise, industrial know-how and continuous innovation define RaySi: a reliable technology partner capable of turning silicone chemistry into high-value solutions.

1.000.000

LITRES
Gel and rubber produced in one year

TAILORED SOLUTIONS

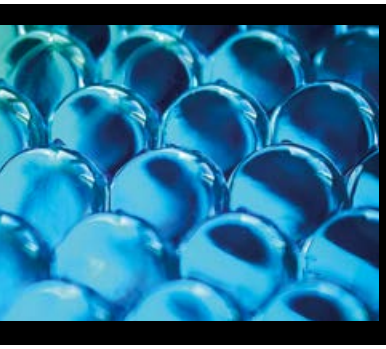
SILICONE RESINS • GELS • RUBBERS

- **Standard formulations and custom-made solutions**
- **Technical support for product development**
- **In-house production and quality control**
- **Dedicated solutions for every application**

WHY CHOOSE

- **High protection up to IP68***
- **Excellent electrical insulation**
- **Lasting elasticity and stability**
- **Resistance to high temperatures and chemicals**
- **Isocyanate-free formulations**
- **Easy application and maintenance**

*Depending on the application.





Materials, properties and applications

A technical application guide to RaySi silicone systems.

RaySi is the Raytech division dedicated to silicone material formulation. It develops resins, gels, two-component rubbers and customised solutions for electrical, electronic, industrial, automotive and energy applications, including renewable energy.

Material selection links three aspects: the required function, application process and in-service behaviour. The descriptions introduce each family's characteristics; the tables provide parameters for comparing formulations and supply formats.

Catalogue contents

Section	Contents	Pages
Company profile and RaySi	History, quality, sustainability and silicone solutions.	3-6
Selection criteria and parameters	System classification; curing; technical parameters.	8-10
Silicone resins	Application properties, formulation data and packaging.	11-12
Silicone gels	Low-modulus systems; standard and extended-pot-life ranges.	13-15
RTV-2 elastomers	Applications; material behaviour; range and consistency.	16-18
Processing and qualification	Dispensing, mixing, pouring and project requirements.	19-20
Fluids and raw materials	PDMS, reactive bases, crosslinkers, modifiers and additives.	21-25
Terminology and specification	Technical glossary and application requirements form.	26-27
Technical notes	Supply configurations and conditions for data validity.	28-29

From properties to formulation

Dielectric insulation, thermal conduction, environmental protection and elastic response are the functional areas covered by RaySi materials. Viscosity, consistency, working time and colour can be adapted to the component and to manual or automatic dispensing systems.

Conventions: approx. = approximately; A:B = mixing ratio; TDS = technical data sheet; SDS = safety data sheet. The references [1]-[7] refer to the notes on pages 28-29.

Selecting the material family

Final consistency, protective function and operating conditions.

The material’s consistency after curing is an initial selection criterion. A low-modulus gel accommodates movement of delicate components; a resin provides a firmer elastic filling; a rubber produces shapes, seals and moulds with elastic recovery.

Family	Material profile	Application
Silicone resins	Elastic materials with medium-to-high mechanical toughness.	Encapsulation and insulation of circuits, connections and wiring.
Silicone gels	Low elastic modulus; high deformability.	Protection of components sensitive to mechanical stress.
Soft rubbers	Consistency between gels and resins; characterised by penetration testing to ASTM D217.	Deformable fillings and elastic protection.
RTV-2 elastomers	Cured materials with elastic recovery; hardness expressed in Shore A for the RTV 28 range.	Moulds, seals and components with defined geometry.
Fluids and raw materials	Non-reactive components, functional bases and additives.	Formulation development and adjustment.

Application selection criteria

Selection must also consider geometry, dispensing method and cycle time. Viscosity must allow the intended filling process, and pot life must cover all operations after mixing and before filling.

In service, temperature, moisture, vibration and any substances in contact with the material are key. If component access is required, removability and reworkability must also be assessed. Performance is verified on the actual component.

Thermal behaviour

The general stated range for RaySi silicone materials is -60 °C to +200 °C, with stable mechanical and electrical properties. Limits and operating conditions for each product code are defined in its TDS [7].

From mixing to curing

How a two-component system develops its final properties.

Platinum-catalysed systems are supplied in two parts, A and B. The platinum catalyst and crosslinker are distributed between the separate components; mixing in the specified ratio initiates the reaction.

During curing, a silicone network forms and the material changes from a liquid to a gel or elastomer. RTV-2 identifies a two-component system capable of curing at room temperature.

Parameters governing the process

Parameter	Characteristic / function
A:B ratio	Proportion of the components. The TDS specifies dispensing by mass or volume.
Pot life	Usable working time after mixing. The criterion given in this catalogue is associated with a doubling of viscosity.
Setting time	Time required to achieve the specified cured state or final properties.
Temperature	Affects reaction kinetics; increasing temperature generally reduces working and curing times.

Workability and commissioning

Pot life indicates the time available for mixing, dispensing and pouring. Setting time describes achievement of the specified final state: a short pot life does not mean immediate readiness for service. Raytech develops both times to suit production requirements.

A:B ratio

A 1:1 ratio by mass is not automatically equivalent to 1:1 by volume. The TDS specifies the dispensing basis. Changing the reaction rate requires a dedicated formulation while maintaining the specified ratio.

Parameters and interpretation

Units, physical meaning and correlation with workability.

Parameter	Unit / reference	Technical interpretation
Viscosity	mPa·s / cP	Resistance to flow; a parameter for dispensing, pouring and filling. 1 cP = 1 mPa·s.
Pot life	min; reference 23 °C	Usable working window of the mixture. Distinct from the time to full cure.
Setting time	min; conditions per TDS	Time to reach the specified final state. To be determined for the formulation and temperature.
Penetration	ASTM D217; 0,1 mm	Cone penetration depth under the test conditions. Higher value: softer consistency.
Hardness	Shore A / Shore 00	Resistance to penetration by a Shore durometer. A higher value on the same scale indicates greater hardness.
Elastic modulus	Elastic resistance to stress	Measure of stiffness under elastic deformation. Low modulus: greater deformation under the same stress.
Shrinkage	Dimensional or volumetric change	Contraction associated with curing; relevant to dimensional stability and reproduction fidelity.

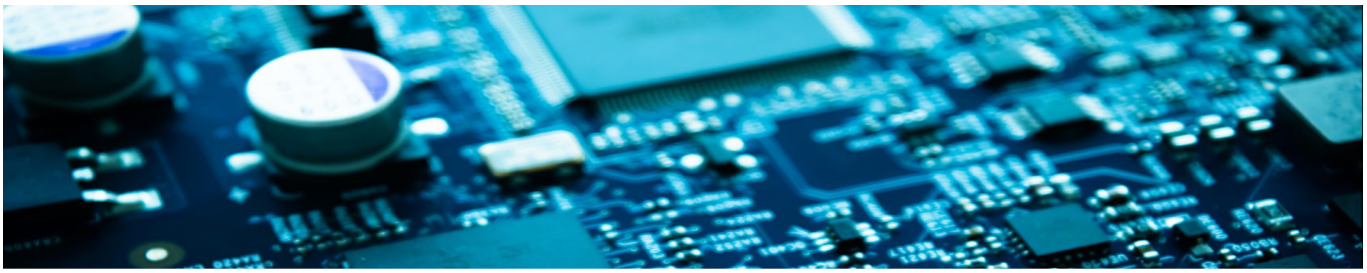
Application correlations

Parameter	Characteristic / function
Viscosity / pourability	For example, RaySiRESIN/35: approx. 2.000 mPa·s; RaySiRESIN/40: approx. 3.000 mPa·s. Viscosity characterises the liquid phase and affects ease of pouring.
Cured consistency	Penetration and hardness characterise the final material; Shore A and Shore 00 scales and ASTM D217 values are not directly interchangeable.

Measurement temperatures are stated where available. For the complete method, tolerances and applicable conditions, refer to the TDS [7].

Resins for protection and insulation

Elastic fillings for connections, circuits and technical enclosures.



Encapsulation of electrical and electronic components.

RaySi silicone resins are poured around components to form a continuous protective filling. After curing, they retain an elastic structure with medium-to-high mechanical toughness, accommodating vibration and thermal expansion.

Property	Application function
Dielectric insulation	Electrical protection of connections and embedded components.
Cured elasticity	Accommodation of stresses caused by movement and temperature changes.
Pourability	Filling of cavities and enclosure geometries, including complex shapes.
Environmental protection	Filling barrier against moisture, dust and contaminants.

Applications and maintenance

Applications include junction boxes, terminal blocks, joints, wiring and circuits in industrial, building, energy, automotive and electronic sectors. The material can be removed with a suitable tool to access components.

Formulation comparison

RESIN/35: approx. 2.000 mPa·s and penetration 100-140. RESIN/40: approx. 3.000 mPa·s and penetration 90-110, also available in single-dose pouches. The former is more fluid; their final consistency ranges overlap.

High-quality raw materials and VOC reduction: stated qualitative characteristics. Classification and safety information: product SDS.

Formulations and packaging

Formulation values and total mass of the two-component kit.

The two formulations differ in viscosity and cured consistency. The supply format is selected according to consumption and dispensing process; formulation data remain the same for the respective pack sizes.

Formulation	A:B [7]	Viscosity A and B mPa·s	Pot life 23 °C	Penetration 0,1 mm
RaySiRESIN/35	1:1	approx. 2.000 mPa·s	approx. 6 min	100-140
RaySiRESIN/40	1:1	approx. 3.000 mPa·s	approx. 6 min	90-110

Penetration: ASTM D217. Data apply to all pack sizes of the same formulation. Colours on request: blue, red, clear, green, yellow and amber.

Product code	Packaging	Total mass
RaySiRESIN/35-10	2 cans	10 kg
RaySiRESIN/35-40	2 cans	40 kg
RaySiRESIN/35-400	2 drums	400 kg
RaySiRESIN/35-1600	2 IBCs	1.600 kg
RaySiRESIN/40-1	2 bottles with 2 compartments, 1 kg each	2 kg
RaySiRESIN/40-10	2 cans	10 kg
RaySiRESIN/40-40	2 cans	40 kg
RaySiRESIN/40-400	2 drums	400 kg
RaySiRESIN/40-1600	2 IBCs	1.600 kg
RaySiRESIN/40-170	Two-component single-dose pouch	170 g
RaySiRESIN/40-210	Two-component single-dose pouch	210 g
RaySiRESIN/40-420	Two-component single-dose pouch	420 g

RaySiRESIN/40-1: 2 bottles with 2 compartments, 1 kg each; total mass 2 kg. Kit masses include both components.

Customisation: pot life, viscosity, pouring behaviour, colour and final consistency.

Gels: low-modulus protection

Soft materials for components sensitive to mechanical stress.

RaySi gels are two-component systems that retain a soft, elastic consistency after curing. Their low elastic modulus allows deformation under low stress: the filling accommodates movement, vibration and thermal expansion without excessively stiffening the component.

They are suitable for protecting sensitive electronics and low-voltage electrical connections. The range combines different consistencies, viscosities and working times, with self-amalgamating variants and formulations for extended pouring cycles.

Functional classes and application criteria

Class	Characteristic	Application
High softness	High penetration and deformability.	Mechanically sensitive components.
Medium consistency	Balance between deformability and consistency.	Filling and encapsulation.
Firmer consistency	Lower penetration of the cured material to ASTM D217.	Fillings with greater mechanical consistency.
Self-amalgamating	High tack and surface adhesion.	Protection in damp or submerged environments, subject to system qualification.
Extended pot life	Working window 30-240 min.	Dispensing and pouring over extended cycles.
Very low modulus	Dedicated systems, also for cartridge application.	Sealing and specification-based development; codes to be defined.

Accessibility and mechanical response

Removability and reworkability facilitate component inspection; the result depends on formulation, adhesion and geometry. Penetration describes consistency, while cushioning and damping performance always require application testing.

Gels: short-pot-life range

Viscosity, A:B ratio and penetration of the cured material.

Product codes	Viscosity cP	A:B	Pot life 23 °C	Penetration 0,1 mm	Packaging total mass
GEL 15/28-400 GEL 15/28-1600	1.700-2.400	1:1	10-20 min	240-320	2 drums: 400 kg 2 IBCs: 1.600 kg
GEL 15/14-400 GEL 15/14-1600	350-500	1:1	7-10 min	180-250	2 drums: 400 kg 2 IBCs: 1.600 kg
GEL 15/22-400 GEL 15/22-1600	500-600	1:1	6-10 min	160-210	2 drums: 400 kg 2 IBCs: 1.600 kg
GEL 19/MV-400 [2] GEL 19/MV-1600 [2]	2.500-3.500	1:1	6-11 min	210-280	2 drums: 400 kg 2 IBCs: 1.600 kg
GEL 19/AV-400 [2] GEL 19/AV-1600 [2]	6.000-8.000	1:1	6-11 min	180-250	2 drums: 400 kg 2 IBCs: 1.600 kg
GEL 92-420 [1] GEL 92-840 [1]	A: 40-60 B: 200-290	1:20	6-11 min	approx. 200	420 kg / 840 kg Details below

Penetration to ASTM D217. A:B ratios: dispensing basis per TDS [7]. Viscosity for all gels is measured at 23 °C.

GEL 92 - standard packaging [1]

Code	Component A	Component B	Total
GEL 92-420	1 pail of 20 kg	2 drums of 200 kg	420 kg
GEL 92-840	2 pails of 20 kg	1 IBC of 800 kg	840 kg

Self-amalgamating variants [2]

Parameter	Characteristic / function
GEL 19/MV	Medium viscosity: 2.500-3.500 cP; penetration 210-280.
GEL 19/AV	High viscosity: 6.000-8.000 cP; penetration 180-250.

Colours on request. Penetration ranges may overlap; selection requires application testing.

Gels with longer working time

Formulations for prolonged dispensing and complex filling.

A longer pot life allows mixing, any degassing and pouring to be completed when the process requires an extended working window. All listed formulations have an A:B ratio = 1:1 [7].

Product codes	Viscosity cP	Pot life 23 °C	Penetration 0,1 mm	Packaging total mass
GEL 38/360-120/210-400 [3]	150-250	2-3,5 hours (120-210 min)	340-380	2 drums: 400 kg
GEL 30/30-400 GEL 30/30-1600	120-200	approx. 30 min	280-350	2 drums: 400 kg 2 IBCs: 1.600 kg
GEL 30/60-400 GEL 30/60-1600	120-200	approx. 60 min	280-350	2 drums: 400 kg 2 IBCs: 1.600 kg
GEL 30/120-400 GEL 30/120-1600	120-200	approx. 120 min	280-350	2 drums: 400 kg 2 IBCs: 1.600 kg
GEL 30/240-400 GEL 30/240-1600	120-200	approx. 240 min	280-350	2 drums: 400 kg 2 IBCs: 1.600 kg

Penetration: ASTM D217, in 0,1 mm. Colours on request. Pot life reference temperature: 23 °C.

Sizing the process window

The stated time must be compared with the full cycle after the components are combined. Production verification must also consider actual material and ambient temperatures, which can alter the reaction rate.

Setting time, required to reach the specified final state, is taken from the TDS and cannot be derived from pot life alone. For GEL 38/360-120/210-400, pot life is 2-3,5 hours (120-210 min), with penetration 340-380 and a 400 kg pack [3].

RTV-2 rubbers: elasticity and shape

Two-component elastomers for moulds, seals and protection.



Pouring silicone elastomer into a mould.

RaySi silicone rubbers are processed in the fluid state and develop an elastomeric structure after curing. This combination reproduces a geometry while retaining deformation and elastic recovery capabilities in service.

Property	Application / function
Elastic recovery	Seals and components subject to movement or compression; circuit protection against vibration and expansion.
Pourability and detail	Mould filling and reproduction of complex geometries.
Dimensional stability	Low cure shrinkage and shape retention.
Release properties	Easy demoulding of cast materials.

Applications and consistency selection

Applications include flexible moulds for wax, plaster and composites, prototypes, seals and insulation. Target sectors include industry, automotive, electric mobility, transport and aerospace.

Hardness or penetration provides an initial selection reference. Elastic response, tear strength, geometry and operating conditions must then be considered: the Shore value alone does not describe overall performance.

From liquid to elastomer

Platinum curing, mechanical behaviour and long-term stability.

Mixing the two RTV-2 components initiates formation of a stable, flexible and durable silicone elastomer. The formulation determines both liquid-state workability and the mechanical response of the final material.

Characteristic	Stated behaviour
Shrinkage	Low dimensional shrinkage during curing.
Exothermic behaviour	Declared absence of an exothermic reaction.
Geometric stability	Good dimensional stability and high-fidelity detail reproduction.
Workability	Good pourability for complex geometries and moulds.
Release	Release properties promoting easy demoulding and repeatability.

Response under load and environmental resistance

The cured material deforms under stress while retaining elastic recovery and mechanical stability, even after repeated compression and thermal shock cycles. The formulations retain their properties across a broad temperature range, including exposure to moisture, condensation, UV radiation and weathering.

The silicone structure contributes to durability in aggressive environments and thermal ageing resistance, with limited stiffening or degradation over time. Specific conditions must be assessed against the formulation and its TDS.

Formulations and processes

Hardness, viscosity, mechanical properties and cure rate can be adjusted: from softer, more deformable systems to firmer elastomers providing greater structural support. Processing can use manual or automatic dispensing.

Applications: flexible technical moulds, prototypes and casting of wax, plaster and composites. Contents of the “RTV-2 Silicone Elastomers” section.

RTV-2 range

Data for comparing workability and consistency across RTV-2 series.

The RTV 830-00S series is characterised by penetration to ASTM D217; the RTV 28 series by Shore A hardness. These parameters describe consistency using different methods. A:B ratio = 1:1 for all products [7].

RTV 830-00S - consistency by ASTM D217 penetration

Product code [4]	Viscosity cP	Pot life 23 °C	Penetration 0,1 mm	Packaging total mass
RaySi RTV 830-00S-12/1	3.000-5.000	7-12 min	200-250	1 single bottle: 1 kg
RaySi RTV 830-00S-12/10	3.000-5.000	7-12 min	200-250	2 pails: 10 kg
RaySi RTV 830-00S-12/20	3.000-5.000	7-12 min	200-250	2 pails: 20 kg
RaySi RTV 830-00S-12/1600	3.000-5.000	7-12 min	200-250	2 IBCs: 1.600 kg
RaySi RTV 830-00S-5/10	3.500-4.500	2-5 min	180-240	2 pails: 10 kg
RaySi RTV 830-00S-5/20	3.500-4.500	2-5 min	180-240	2 pails: 20 kg
RaySi RTV 830-00S-5/1600	3.500-4.500	2-5 min	180-240	2 IBCs: 1.600 kg

RTV 28 - Shore A hardness

Product code [4]	Viscosity cP	Pot life 23 °C	Shore A hardness	Packaging total mass
RaySi RTV 28-10S/1	1.000-2.000	10-20 min	5-10	1 single bottle: 1 kg
RaySi RTV 28-10S/400	1.000-2.000	10-20 min	5-10	2 drums: 400 kg
RaySi RTV 28-20S/1	5.000-6.000	approx. 9 min	25-35	1 single bottle: 1 kg
RaySi RTV 28-20S/400	5.000-6.000	approx. 9 min	25-35	2 drums: 400 kg

Penetration: ASTM D217. Penetration and Shore A hardness measurements are not directly comparable. Colours on request.

Dispensing, mixing and pouring

Processing stages and controls that determine consistent results.

Cured performance also depends on correct mixture preparation. Accurate dispensing, homogenisation and timing produce a uniform filling, limiting uncured areas and entrapped air.

Stage	Operation	Control parameter
01 / Preparation	Identify components and A:B ratio. Caution: equipment and surfaces must be clean.	Code, batch, dispensing basis and surface compatibility.
02 / Dispensing	Measure the specified quantities by mass or volume.	Compliance with the ratio and measurement system accuracy.
03 / Mixing	Complete homogenisation, including the container base and walls.	Mixture uniformity; absence of unmixed areas.
04 / Degassing	Vacuum treatment, if specified by the process.	Reduction of entrapped air and uniform filling.
05 / Pouring	Fill within the available pot life.	Continuous pouring and compatible cycle time.
06 / Curing	Maintain the specified conditions and times.	Achieve the final state before commissioning.

Compatibility and process control

Amines, sulphur, tin compounds and latex or rubber residues can inhibit platinum-cured systems. If curing is incomplete, check the A:B ratio, mixing, temperature and contamination. A small-scale preliminary test is useful when substrates or operating conditions change.

Manual or automatic dispensing must comply with the TDS. Handling, storage and operator protection are described in the SDS.

Material properties and performance

Define component requirements and verify the complete system.

Silicone properties provide the basis for selection, but final performance depends on integration into the device. The enclosure, geometry, contact materials and pouring process must be assessed together with operating conditions.

Requirement	Design variables	Qualification
Water and dust tightness	Enclosure geometry, cable entries, filling continuity and thickness.	Test of the complete configuration; required IP rating.
Electrical insulation	Voltage, clearances, geometry and formulation dielectric properties.	Electrical specifications of the material and device.
Thermal resistance	Minimum and maximum temperatures, exposure duration and cycles.	Stability under actual operating conditions.
Chemical compatibility	Contact substances, concentration, temperature and duration.	Test of the material/environment system.
Maintainability	Adhesion, accessibility and removal method.	Component servicing and replacement capability.
Material replacement	Required performance, existing process and geometry.	Application comparison on the actual component.

IP68 rating

Protection relates to the complete configuration: material, enclosure, joints and application process. The IP rating is not an intrinsic property of the resin or gel alone.

Maintenance and product management

Removability provides component access for inspection, replacement and potential end-of-life recovery. The formulations are declared isocyanate-free; classification and safety information are given in the Raytech SDS.

SILICONE OILS AND REACTION REGULATORS

Family	Identification	Function
Non-reactive fluids	Non-reactive linear PDMS	Lubrication, release, insulation and modification of rheological behaviour.
Vinyl-functional bases	Vinyl PDMS	Reactive polymer phase for silicone network formation.
Crosslinkers	Methylhydrogen PDMS / crosslinker	Supply of SiH groups for crosslinking with vinyl-functional bases.
Reactive modifiers	SiH-terminated PDMS / chain extender	Adjustment of network structure, softness and flexibility.
Catalysts	Platinum complex	Promotion and acceleration of the curing reaction.
Inhibitors	DVS	Control of catalytic activity and reaction kinetics.
Colourants	Silicone colour masterbatch	Pigments predispersed in a silicone base to colour the formulation.

NON-REACTIVE METHYL SILICONE FLUIDS

Product code	Viscosity at 25 °C mPa·s	Packaging
RAY-PSM-50/20	50	1 jerrycan of 20 kg
RAY-PSM-50/1000	50	1 IBC of 1.000 kg
RAY-PSM-100/20	100	1 jerrycan of 20 kg
RAY-PSM-100/1000	100	1 IBC of 1.000 kg
RAY-PSM-350/20	350	1 jerrycan of 20 kg
RAY-PSM-350/1000	350	1 IBC of 1.000 kg
RAY-PSM-12500/20	12.500	1 jerrycan of 20 kg
RAY-PSM-12500/1000	12.500	1 IBC of 1.000 kg
RAY-PSM-60000/20	60.000	1 jerrycan of 20 kg
RAY-PSM-60000/1000	60.000	1 IBC of 1.000 kg

Applications and selection criteria

Non-reactive PDMS is used for lubrication, as a release agent, in electrical insulation, antifoam formulations and rheological adjustment. In hydrophobic treatments it provides water repellency, which must be distinguished from a system’s sealing performance.

At the same temperature, lower viscosity means greater fluidity. The listed range extends from 50 to 60.000 mPa·s at 25 °C; other viscosities and quantities are available on request.

Functional PDMS and crosslinkers

Vinyl-functional bases and SiH crosslinkers for silicone network formation.

Vinyl-functional fluids

Vinyl-functional PDMS provides the reactive base for gels, resins, RTV-2 rubbers and silicone adhesives. Vinyl content indicates the quantity of groups available for reaction; together with viscosity, it guides formulation balance.

Product code [5]	Vinyl mmol/g	Viscosity at 25 °C mPa·s	Packaging
RAY-PSV-5K/190	approx. 0,06	5.000	1 drum of 190 kg
RAY-PSV-10K/190	approx. 0,05	10.000	1 drum of 190 kg
RAY-PSV-65K/190	approx. 0,03	65.000	1 drum of 190 kg
RAY-PSV-100000/2190	approx. 0,02	100.000	1 drum of 190 kg
RAY-PSV-165000/190	approx. 0,015	165.000	1 drum of 190 kg

Appearance: clear and colourless. Packaging: drums with a net mass of 190 kg [5].

SiH crosslinkers / methylhydrogen PDMS

The crosslinker’s SiH groups react with vinyl groups to form the network. SiH content, expressed in mmol/g, is therefore an essential parameter in defining the reactive system.

Product code	SiH mmol/g	Viscosity at 25 °C mPa·s	Packaging
RAY-XLK-40/10	4,2	40	1 pail of 10 kg
RAY-XLK-40/190	4,2	40	1 drum of 190 kg
RAY-XLK-50/10	3,2	50	1 pail of 10 kg
RAY-XLK-50/190	3,2	50	1 drum of 190 kg

Appearance: clear and colourless. Other viscosities and quantities of vinyl-functional bases and crosslinkers are available on request.

Adjusting consistency and curing

Reactive modifiers, platinum catalysts and DVS inhibitor.

Reactive modifiers / chain extenders

Modifiers with terminal SiH groups affect network structure and material flexibility. They are used to develop soft gels, low-hardness elastomers and deformable systems. Appearance: clear and colourless.

Product code	SiH mmol/g	Viscosity at 25 °C mPa·s	Packaging
RAY-MOD-500/10	0,16	500	1 pail of 10 kg
RAY-MOD-500/190	0,16	500	1 drum of 190 kg

Platinum catalysts

The catalyst promotes curing. Its content and the process conditions jointly determine working and reaction times. The range comprises platinum complexes dispersed in polydimethylsiloxane oil, with a pale yellow colour.

Product code [6]	Pt content %	Viscosity at 25 °C	Packaging
10 RAY-CAT-1	0,5%	500 mPa·s	1 kg bottle
11 RAY-CAT-1	1%	500 mPa·s	1 kg bottle
12 RAY-CAT-1	2%	500 mPa·s	1 kg bottle

DVS inhibitor

The inhibitor controls catalyst activity to provide the time window required for mixing, dispensing and pouring. Appearance: clear and colourless.

Product code	Vinyl	Viscosity at 25 °C	Packaging
RAY-INH-1	10,7 mmol/g	4 mPa·s	1 bottle of 1 kg

Concentrations and dosages are defined during formulation. Ready-to-use two-component systems are applied in accordance with their TDS.

Colour and tailored formulations

Silicone masterbatches and properties adapted to the project.

The masterbatch contains pigments already dispersed in a silicone base. This form facilitates colour incorporation into the formulation and uniform distribution compared with direct use of powdered pigments.

Product code	Indicative colour	Packaging
RAY-COL-B	Light blue / cyan	20 kg drum
RAY-COL-R	Red	20 kg drum
RAY-COL-Y	Yellow	20 kg drum
RAY-COL-GR	Green	20 kg drum
RAY-COL-A	Orange	20 kg drum
RAY-COL-GO	Golden yellow	20 kg drum

Colour names are indicative and do not constitute RAL references or colorimetric specifications. The shade must be confirmed on a sample; other colours are available on request.

Customising properties

Parameter	Characteristic / function
Pot life and setting time	Adjusting kinetics to suit cycle time and commissioning.
Viscosity and rheology	Compatibility with dispensing, pouring and filling geometry.
Consistency and elastic response	Adjustment of penetration, hardness and deformability.
A:B ratio	Development of systems compatible with the dispensing equipment.
Colour	Product identification and aesthetic requirements.

Development starts with the component, operating conditions and production process. RaySi can adapt the formulation and prepare samples for application testing. The form on page 27 gathers the requirements needed for technical discussion.

Technical glossary

Definitions of key product and process terms.

Term	Definition
Addition cure	Curing by reaction of the silicone system’s functional groups.
Two-component / A+B	Two-part system mixed in the specified ratio.
Compound / compounding	Formulated material / process of combining components.
Curing / crosslinking	Network formation and development of final consistency.
Cushioning / damping	Absorption / damping of stresses and vibration.
Dielectric	Relating to the material’s electrical insulation behaviour.
Elastomer	Material characterised by elastic deformation and shape recovery.
Encapsulation / potting	Filling around components for protection and insulation.
Inhibition	Reduction or prevention of the curing reaction.
Masterbatch	Concentrate of pigments predispersed in a compatible base.
Moulding / sealing	Moulding or mould making / sealing.
Network / crosslinker	Material network / component that forms its links.
PDMS	Polydimethylsiloxane, a silicone polymer base.
Pot life / setting time	Usable working time / time to reach the specified final state.
Rheology / viscosity	Flow and deformation behaviour / resistance to flow.
Shore A / Shore 00	Distinct durometer scales; the scale must be specified.
SiH / vinyl	Reactive functional groups involved in network formation.
TDS / SDS	Technical data sheet / safety data sheet.

Project requirements form

Data for material selection, formulation development and validation.

Specification item	Application data
Company / contact	_____
Component / application	_____ _____
Function	Insulation / encapsulation / sealing / moulding Other: _____
Contact materials	Substrates, coatings, contaminants: _____ _____
Geometry / quantity per part	Filling volume or mass: _____
Application process	Manual / automatic; dispensing system: _____ Cycle time and required pot life: _____
Thermal conditions	Application: _____ °C; min/max service: _____ °C Exposure duration / cycles: _____
Environmental exposure	Water / moisture / UV / vibration: _____ Chemicals, concentration and duration: _____
Mechanical properties	Penetration / hardness / elastic response: _____
Maintainability and appearance	Removability: _____; colour: _____
Demand / supply	Expected consumption: _____; format: _____
Performance to be qualified	IP rating: _____; electrical requirements: _____ Chemical resistance and other tests: _____

Technical attachments: enclosure drawing or geometry; component materials; test specifications. Final selection based on the TDS and agreed application testing.

Product configurations

Variant identification and summary of distinguishing parameters.

[1] GEL 92 - A:B ratio = 1:20

Code	Component distribution	Total
GEL 92-420	20 kg A + 400 kg B	420 kg
GEL 92-840	40 kg A + 800 kg B	840 kg

Viscosity: A 40-60 cP; B 200-290 cP. Packaging configuration on page 14.

[2] Self-amalgamating gels

Codes	Viscosity at 23 °C / cP	Penetration / 0,1 mm
GEL 19/MV-400 GEL 19/MV-1600	2.500-3.500	210-280
GEL 19/AV-400 GEL 19/AV-1600	6.000-8.000	180-250

For both variants: A:B = 1:1; pot life at 23 °C = 6-11 min. ASTM D217 penetration.

[3] Extended-pot-life range

GEL 38/360-120/210-400: 150-250 cP; pot life 2-3,5 hours; penetration 340-380; 2 drums totalling 400 kg. GEL 15/28-1600 belongs to the range with a pot life of 10-20 min. Tables: pages 14-15.

[4] RTV-2 series

Series	Pot life at 23 °C	Consistency
RTV 830-00S-12	7-12 min	Penetration 200-250
RTV 830-00S-5	2-5 min	Penetration 180-240
RTV 28-10S	10-20 min	5-10 Shore A
RTV 28-20S	approx. 9 min	25-35 Shore A

Single bottles: 1 kg. ASTM D217 penetration in 0,1 mm. Full codes and packaging: page 18.

Conditions for data validity

Identification, product documentation and revision references.

[5] Vinyl-functional fluids

Range prefix PSV. All listed packs contain 190 kg net. Full codes and packaging: page 23.

[6] Platinum catalysts

Code	10 RAY-CAT-1	11 RAY-CAT-1	12 RAY-CAT-1
Pt content	0,5%	1%	2%

[7] Ratios, measurements and performance

Parameter	Characteristic / function
A:B dispensing	1:1 for the indicated systems; 1:20 for GEL 92. Mass or volume basis per TDS.
Process times	Pot life and setting time are distinct parameters. Pot life reference: 23 °C.
Viscosity	Equivalent units cP or mPa·s. Temperature stated where available; further conditions per TDS.
Consistency	ASTM D217 penetration in 0,1 mm; hardness with Shore scale specified. No direct conversion between parameters.
Thermal performance	General stated range -60 °C / +200 °C; limits for each code to be checked in the TDS.
Application performance	Electrical properties, chemical exposure, service life and IP rating to be qualified on the system.
Documentation	TDS for performance and processing; SDS for classification, handling and product management.

Notes

Notes

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