Silikony polskie

Chemical Plant
“SILIKONY POLSKIE” Ltd.

Chemical Plant "Silikony Polskie" Ltd.

Chemical Plant „Silikony Polskie" Ltd. is a leading producer of silicone products, on a Polish market, with wide spectrum of application.

The wide range of product offer includes: paints, water repellent agents, RTV and HTV rubbers, fluids, emulsions and pastes. The products are designed for companies and institutions as well as for individual users.

The high quality of the products achieved by careful selection of raw materials, experience of employees, excellent technology enables the company to meet high requirements of customers and to strengthen position on the market.

Availability of products, on-time deliveries, professional technical advising and competitive prices are certainly strong advantages which guarantees customers satisfaction and successes of our company.

We invite you to cooperation.

Sip® Silikony polskie

It has been 50 years now…

The first research on silicone synthesis in Poland was undertaken in 1953, which was 10 years after starting the world's first industrial production of silicone in the USA. This research was inspired by the task commissioned by the Ministry of Chemical Industry to develop the production technology of heatproof silicone resin resistant to temperatures up to 500oC. The Institute of Plastics in Warsaw was appointed to perform the task, as a result of which the first research laboratories with specialization in silicone were created. Developing the production technology of the first silicone range started from refining the synthesis methods of basic monomers: methylchlorosilan and phenylchlorosilan. Intensive scientific research in this field conducted by the Institute of Plastics resulted in establishing, in 1962, the Silicone Department located within the premises of "Sarzyna" Chemical Plant with the aim of producing monomers at a technical scale 1/2. The choice of location in Sarzyna was dictated by the co-operation between "Sarzyna" Chemical Plant and the Institute of Plastics; both involved in implementing and developing the production of plastics. It was also due to security reasons arising from the high risk of conducting a technological process of silicone monomer synthesis in those conditions, and the similarity of the technology to the structure of production as then in the Chemical Plant. It was consistent with the principles of global strategy of industrialization and urbanization of the country and with the specialization profile of the Chemical Plant. Intensive research works on extending the range of silicone products for sale required the expansion of one half of the technical system for monomers' production. It was connected with considerable financial outlays and burdened by high risk; after all these were the first experiments of that kind in the country. However, the Chemical Plant decided against investing in the construction of a larger system and dispensed with unprofitable small-scale production of monomers. In 1964 the implementation trials were abandoned, and the Silicone Division was excluded from the organizational structure of the Chemical Plant and handed over to the Institute. Further research and silicone implementation works were conducted independently by the Institute. Since September 1964 the organizational legal form of the Silicone Division was defined as Local Division of Plastics Pilot Plant of the Institute of Plastics in Warsaw. The Local Division was created on the basis of the existing processing system in the Chemical Plant and throughout its period of existence and afterwards it received significant assistance from the Chemical Plant and the Institute of Plastics. The substantive development of the Local Division and the organizational impediments arising therefrom caused further changes in the legal status.

By virtue of the Ordinance issued on 29 August 1967 by the Minister of Chemical Industry the Local Division was transformed into the independent Silicone Pilot Plant in Sarzyna.

The transformation of Silicone Pilot Plant into an independent organization working for its own account enabled the conduct of trials aimed at obtaining different silicone varieties from imported (mainly from the Soviet Union) monomers and semi-finished products and gradual implementing of new ranges in the conditions of very limited import those days.

Further changes in name of the plant had a solely formal character. When in 1971 the Institute of General Chemistry and the Institute of Plastics joined together creating the Institute of Industrial Chemistry and in 1974 Sarzyna acquired municipal rights, the Silicone Pilot Plant was renamed as The Institute of Industrial Chemistry and operated under this name until the year of 2000. Silicone Pilot Plant in Nowa Sarzyna.

Transparent organizational structure of the Pilot Plant enabled its dynamic development and the increase in the production volume. However, the plant's formula regarding testing and transferring technologies to industries as well as the continuation of the production with the industrial scope failed to succeed. Formally being the Pilot Plant, the plant was as a matter of fact the only national silicone producer, furthermore with limited production capabilities due to conducting research-implementation works at the same time. Throughout the whole period of the plant's activ-

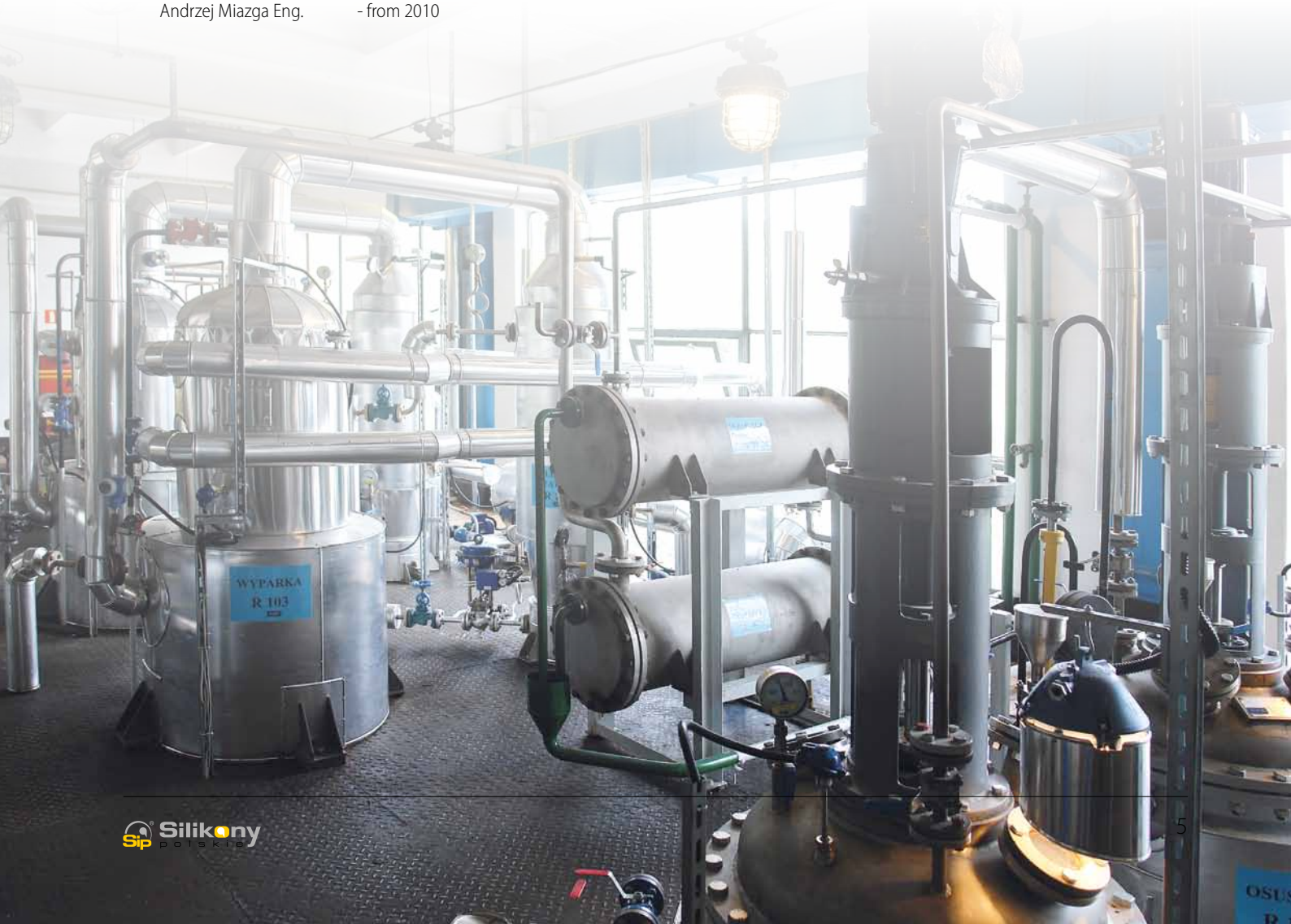
ity its development was sustained by its own financial resources. The period of dynamic development alternated with the periods of stagnation and adaptation to the newer and newer political, economic and market conditions and ripening to free market economy.

The economic reforms of the 80s and 90s were the periods of the plant's transformation and adaptation of its achievements to date to conditions of the new market economy together with the substantial change in the structure of the customers (from the dominating industrial sector to the equal share of the market customers and the craft). This situation required intensive production development with the simultaneous improvement of technology and was forced by the conditions of product application by the market sector. The market economy gave rise to successful operations for the benefit of the construction and development of the plant's own authorized distribution network and it also led to the transformation of the plant into a commercial company on 1 December 2000 and the change of name into Zakład Chemiczny „Silikony Polskie" Sp. z o.o. (Chemical Plant "Polish Silicones" Ltd.).

The Industrial Chemistry Research Institute in Warsaw and Zakłady Chemiczne "Organika-Sarzyna" (Chemical Plant Ltd.) in Nowa Sarzyna have become the Company's shareholders. The following contributions were made to start the company: structured, organization-allocated self-financing unit under the name of the Silicone Pilot Plant as the contribution of the Institute and the Silicone Division contributed by Zakłady Chemiczne "Organika Sarzyna".

Since its establishment the plant has been managed by:

Władysław Kraszewski Eng.	- from 1967 to 1971
Zygmunt Słówko MSc Eng.	- from 1971 to 1988
Andrzej Makosik Eng.	- from 1988 to 1992
Andrzej Miazga Eng.	- from 1992 to 2008
Wojciech Czyż MSc Eng.	- from 2008 to 2010
Andrzej Miazga Eng.	- from 2010



Sales offer

- water repellent agents
- facade paints
- hydrophilic agents
- RTV rubbers
- polymers, HTV masterbatches and compounds
- emulsions
- pastes
- fluids
- binders, varnishes and hydrophobing agents
- antifoaming agents
- separating agents

Silicone water repellent agents

Sarsil®, Ahydrosil®, Antigraf

Most building materials are endangered by destructive action of such environmental factors as water penetration, erosion caused by gas particles, impact of microorganisms and accidental defects of materials.

A wide range of products offered by „Silikony Polskie" is designed for impregnating various materials used in building industry, i.e. concrete, burnt brick and clinker brick, roofing-tiles, sandstone, limestone, paving blocks, gypsum, etc.

For many years, the silicoorganic agents, commonly known under **SARSIL®** and **AHYDROSIL®** trade names, offered as solvent solutions and water emulsions, have been most frequently used for protecting against impact of water and environmental factors. Prior to their impregnation, strongly soiled building facades are recommended to be cleaned with the use of **Sarsil® Czyścik** chemical agent.

The impregnating agents perfectly protect new building facades as well as strengthen the old and worn out facades. That is why have won approval of building restorers and have been successfully used for renovation of historic buildings, including sacred buildings. Due to their quality that has been confirmed in numerous tests, including the tests performed by the Road and Bridge Research Institute and the Air Force Institute of Technology, our products can be used in road building industry for anti-corrosion protection of concrete bridge structures as well as for protecting concrete road and apron surfaces.

SARSIL® silicone paints are designed for outdoor and interior applications in new buildings as well as for renovation applications for coating concrete, reinforced concrete, brick, cement-lime plasters, polymer-cement plasters, gypsum plasters (traditional and thin-layer plasters). They are ideal for painting all types of facades in apartment buildings, offices and industrial buildings as well as historic and sacred buildings. The paints are also recommended for use in road engineering for anti-corrosion protection of concrete structures, reinforced-concrete structures and compressed structures including bridges, viaducts, curbs.

SARSIL® silicone paints create durable, waterproof, protective as well as decorative coatings that have excellent use characteristics. They decorate but first of all protect facades against destructive impact of aggressive environment, guaranteeing in this way their long-lasting cleanliness as well as good and unchanging appearance.

Hydrophilic agents

Sarsil®OH

Many years of use combined with drastically growing atmospheric pollution lead to progressing destruction of buildings, especially historic ones. Trying to meet the requirements and expectations of building restorers, the hydrophilic consolidating agents have been developed within the scope of a special purpose grant for the purpose of strengthening the porous building materials.

These agents are available in three standard versions (**SARSIL®OH-100**, **SARSIL®OH-300** and **SARSIL® OH-500**) and contain ethyl esters of orthosilicate acid (active substance) of standard polycondensation degree. An agent strengthening action consists in forming of silica within a structure of disintegrated base materials. The created silica is a perfect strengthening binder.

The Programme of Renovation and Preservation of Historic Buildings with the use of Sarsil ® Technology has been established with the aim of restoring old buildings and preserving newly-built facilities.

The following agents are used within the scope of the technology:

- hydrophilic strengthening agents
- water repellent agents
- silicone facade paints

Silicone rubbers

Polastosil®, Gumosil®, Polsil®Gum

The Company's sales offer includes 2 types of silicone rubbers: RTV and HTV.

1. RTV RUBBERS - VULCANIZING AT ROOM TEMPERATURES

RTV-2 The two-component silicone rubbers, marked with **POLASTOSIL®** and **GUMOSIL®** trade names, cure under influence of a catalyst in a condensation and additive systems.
Main areas of application include:

- decorations, stuccowork: castings, coiling roses, figurines, decorative candles, statuettes,
- renovation of architectural monuments: making moulds for monuments, archaeological fossils, etc.,
- ceramics: standards and moulds for artistic, home-based and industrial making of ceramic and porcelain products,
- artistic products: sculptures, masks, special decorative elements, figurines, bas-reliefs,
- technology: prototypes and components for leak tests and corrosivity checking, making moulds for technical and industrial applications (e.g. automotive components, audio-video equipment, household products),
- building industry: facade tiles, artificial stone, stucco, garden structures such as e.g. ornamental garden ponds, fountains, statuettes, etc.,
- pad printing: making of pads,
- shoe making: making moulds for shoe soles, production of artificial leather,
- metal casting: jewellery, decorative products,
- prosthetics.

The Company produces also rubbers that are used for protecting electric and electronic systems (including such systems installed in small size motors) as well as transistor systems against impact of external factors such as: moisture, dust, precipitation, etc.

These rubbers curing at room temperature under influence of a catalyst are marketed under **Polastosil® M-2000** and **Polastosi®l M-60** and also **Polsil® MV AB** and **Polsil MV AB/S** trade names.

GLUES **POLASTOSIL® AC-4A**: highly-flexible silicone glue characterized by a very good adhesion to almost all type of base material. Ideal for regenerating moulds made of silicone rubbers **Polastosil®** and **Gumosil®** type and as a prime coat strengthening the adhesion of the above-mentioned rubbers to such base materials as metal, glass, ceramics, porcelain, wood.

2. HIGH TEMPERATURE VULCANIZING RUBBERS - HTV

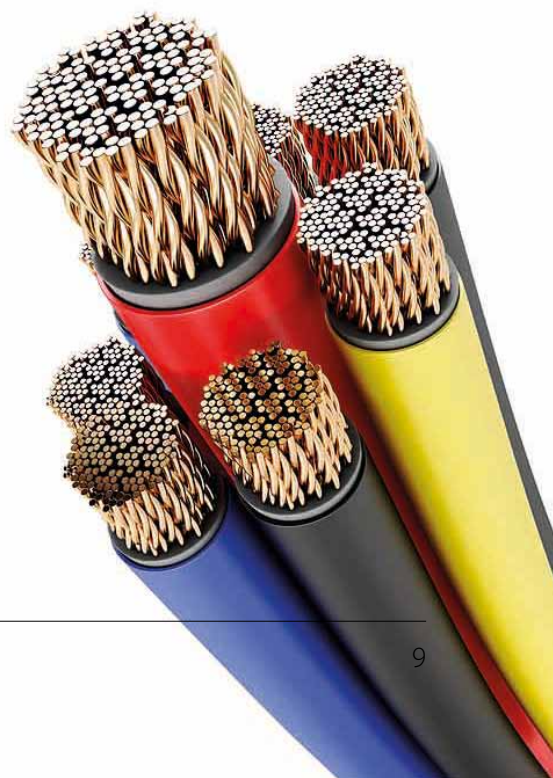
Methylvinylsilicone rubbers are designed for production of silicone gums. They are manufactured in two basic grades:

- **POLIMER MV 0,07**
- **POLIMER MV 1,0**

The polymers are used for making HTV silicone masterbatches and compounds **POLSIL® GUM** which after vulcanizing form silicone rubbers with hardness from 30 to 70°ShA and different, specific properties. These masterbatches can be used for manufacturing hoses, sections, gaskets, plates and many others extruded or moulded products.

HTV silicone ruubers can be also used for insulation of electric conductors.

The offer also includes plasticizer **POLIMER MV-0** that is used in rubber industry for producing silicone masterbatches and rubbers.



Emulsions

Polsil®E, Sarsil®

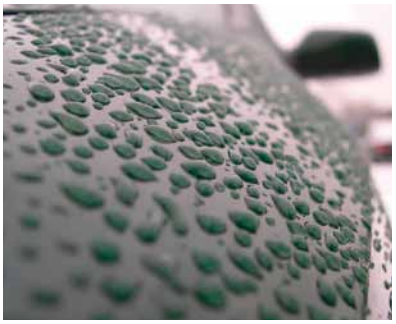
Water emulsions of methylsilicone fluids have good surface moistening properties and are non-reactive chemically.

Areas of application of **POLSIL® E** silicone emulsions:

- industry: as releasing agents for moulds in foundry engineering and processing of plastics and rubbers and as additives to car cosmetics and household chemistry products,
- household applications: as agents for cleaning, glazing and preserving leather-like materials, rubber products and plastic products, ceramic tiles, lacquered surfaces, etc.

After water evaporation, on the surfaces coated with **POLSIL® E** emulsion, a thin layer of silicone fluid is created that gives the products coated the glossiness as well as hydrophobic and anti-adhesion properties.

SARSIL® Mineral - for hydrophobic treatment of mineral wool combined with a phenol resin binder.

Pastes

Silpasta

The Company makes several types of silicone pastes under **SILPASTA®** trade name. The pastes are used mainly as releasing agents in processing of thermoplastic and thermosetting plastics, electrical insulations, lubricating and shock absorption agents, agents improving thermal conduction, preserving agents widely used in household applications and agents improving anti-corrosion resistance of metals.

Methylsilicone fluids

Polsil® OM

The Company's sales offer includes methylsilicone fluids that are marketed under **POLSIL®OM** trade name and produced in a wide range of viscosity: from 10 to 10000 cSt.

These fluids are characterized by a wide range of special properties including: resistance to low and high temperatures as well as resistance to impact of atmospheric factors and numerous chemical factors.

They are used as:

- releasing agents,
- agents increasing surface slip,
- hydraulic fluid,
- fluid for heat exchangers,
- liquid dielectrics,
- agents for foam elimination,
- additives for paints, lacquers, cosmetics, pastes and French polishes.

Binders, varnishes and hydrophobing agents

Sarsil®, Silak®

The Company's sales offer includes also silicone resins that are recommended as auxiliary and refining agents used in the production of:

- paints and plasters: **SARSIL® H-50**, **SARSIL® ME-25**, **SARSIL® ME-60**, **POLSIL® AMO 50**
- heat-resisting enamels: **SILAK® 031**, **SILAK® 032**, **SILAK® M-101**
- cement based products: **SARSIL® CM-70**
- gypsum based products: **SARSIL® G-50**

Silicone lacquers are also used for coating steel, cast iron and aluminium surfaces. The obtained lacquered coatings are characterized by high gas permeability and resistance to water, diluted saline solutions and acid solutions at ambient temperature. These agents are also used as anti-adhesion coatings in metal moulds.

Antifoaming agents

Silpian

Antifoaming silicone agents are designed to prevent foaming or eliminate foam in hydrous and anhydrous systems: **SILPIAN W-2, SILPIAN W-3, SILPIAN WE-4**.

Typical areas of their application are the following: sewage-treatment plants, textile industry, some chemical technological processes, production of pesticides and other applications.

Seperating agents

Polsilform®

POLSILFORM® preserving and separating agent is produced on the basis of methylsilicone fluid and supplied in aerosol containers.

It is convenient to use and is successfully applied for preventing adhesion of plastic to moulds in the plastics and rubber processing. The product can be also used as separating agents for glues, putty and painter's putty.

Other products for special applications e.g.:
- **SARSIL® PS 72/5** – for coating medical needles.
- **POLSIL® P-300** – for applying a silicone coating to paper.

Research and development
activities

The Company has its own well-developed and modern production facilities. The arrangement of the production lines and individual work stands guarantees optimal production process as well as ensures that the environment protection requirements are adhered too. The Company has been spending a significant portion of its profits on the research aimed at improving and developing products in accordance with the needs and expectations of the market. The Company performs its research activities in a close cooperation with the leading scientific and research units in Poland as well as with the institutions of higher chemical education such as:

- The Industrial Chemistry Research Institute in Warsaw,
- Adam Mickiewicz University in Poznań,
- The Centre of Molecular and Macromelecular Studies, Polish Academy of Sciences, in Łódź,
- The Nicolaus Copernicus University (NCU) in Toruń,
- The Białystok Technical University,
- The Cracow University of Technology,
- The Medical University of Gdańsk and other institutions.

Quality policy

The Company has a qualified staff as well as its own well-equipped laboratory facilities where the product quality analyses can be prepared and the research aimed at developing new products can be carried out.

"The chain is as strong as its weakest link". This general principle refers also to the products offered by "Silikony Polskie". In order to guarantee perfect quality of the offered products, the Company uses top quality raw materials delivered by proven and reliable suppliers.

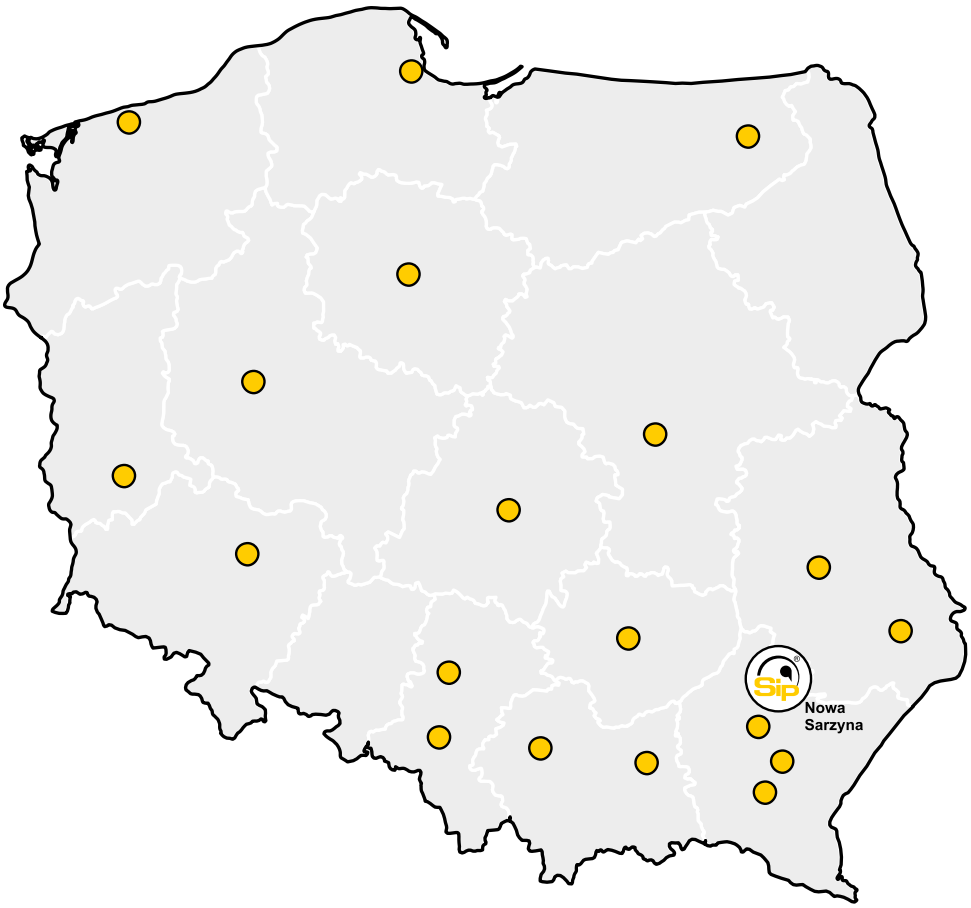
The Company operates in accordance with the current ISO 9001:2015 international quality standard.

ISO system guarantees not only high quality products but also complete stability of customer service and other activities connected with company operations.

In 2006 the Company received the Integrated Environmental Permit. This document is necessary to conduct business activities in the European Union after 2006.

References

Quality of our products and customer approval for the products has been confirmed by numerous awards and distinctions



The Company established in: **1967**
Company status: **limited liability company**
Company premises area: **44 000 m²**
Share capital: **17 363 000 PLN**





Chemical Plant " SILIKONY POLSKIE" Ltd.
37-310 Nowa Sarzyna, Chemików 1
tel./fax + 48 17 78 51 230, tel. + 48 17 78 51 208
www.silikonypolskie.pl
e-mail: silikony@silikony.pl