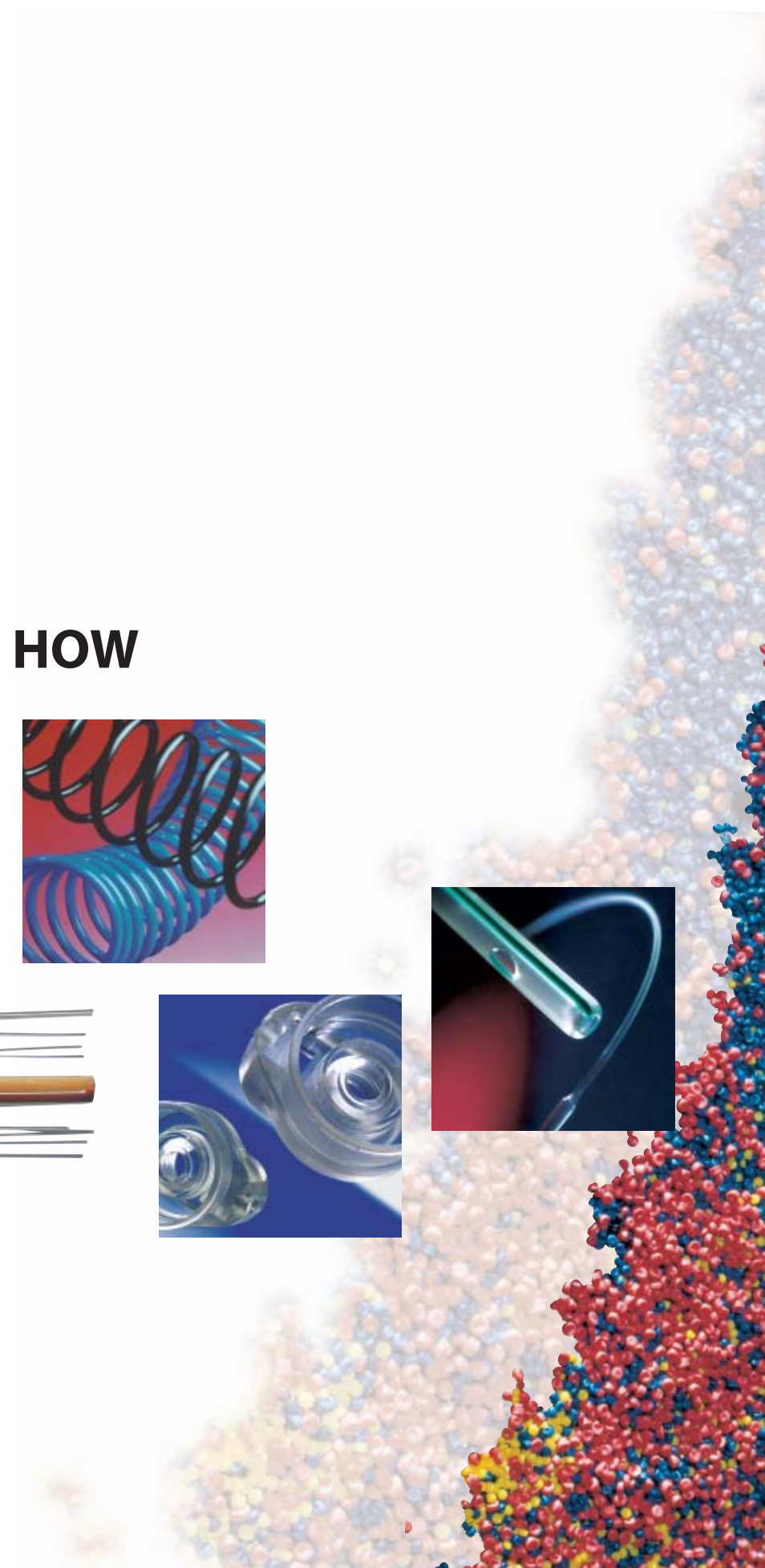
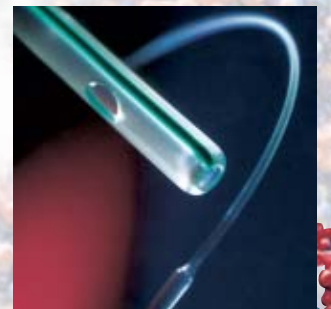
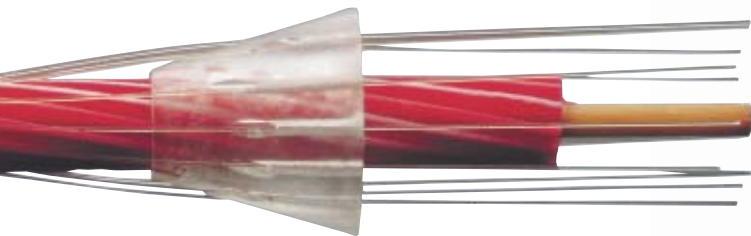
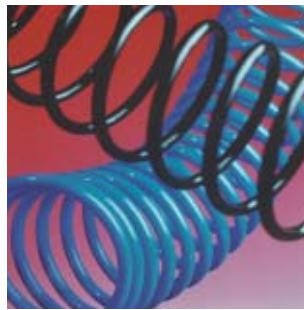
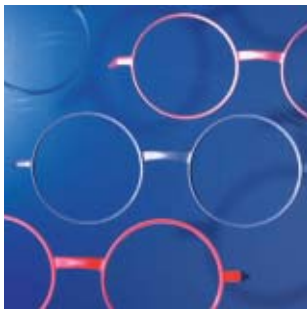
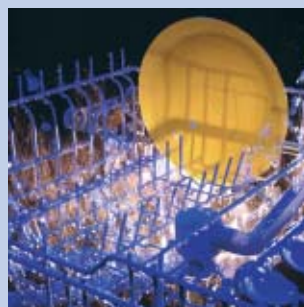
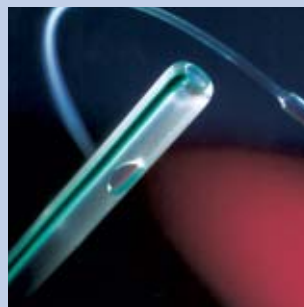
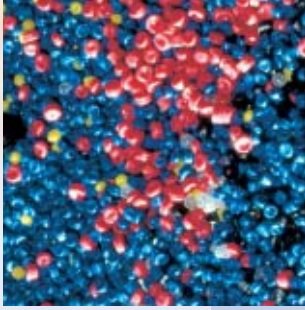


degussa.

High Performance Polymers

KNOWING HOW

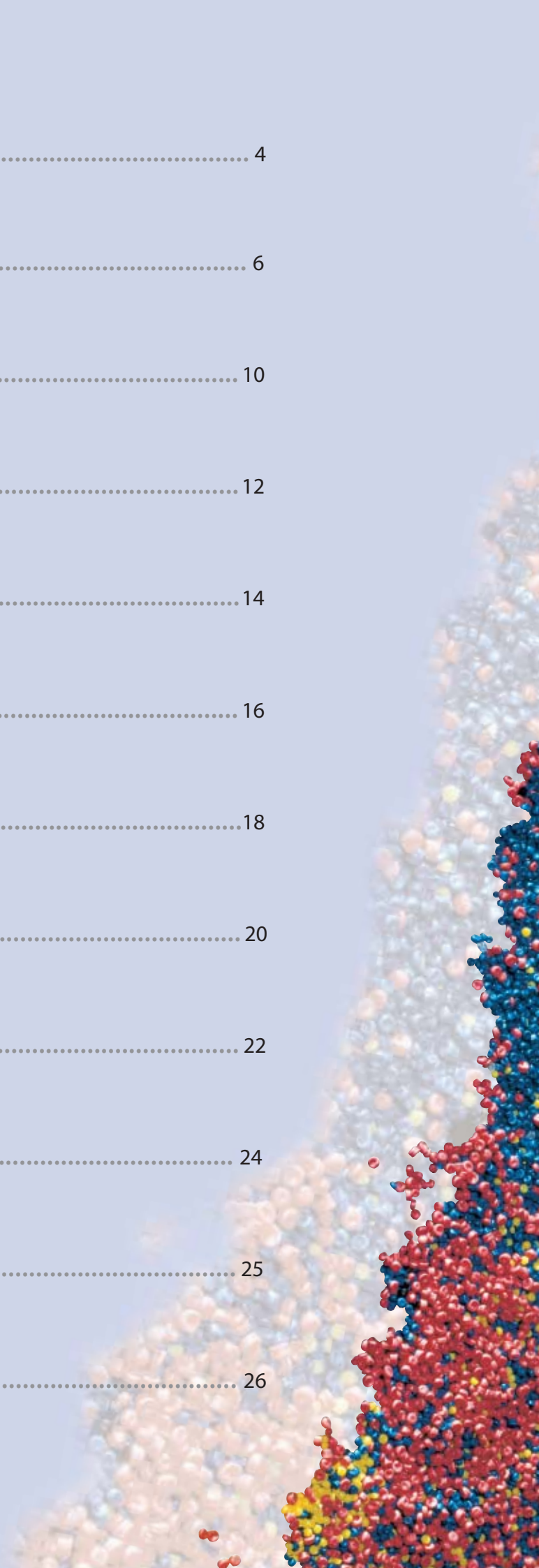




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YOUR PARTNER

We in the High Performance Polymers Business Unit of Degussa AG have made it our job to work together with customers in the development of high performance polymer compounds. With employees who know the market and the needs of our partners in detail. With products that are continuously modified to meet new demands. With procedures that ensure high quality. And with a corporate philosophy that equally values economy, safety and quality.

Our business unit currently employs some 750 persons. Of these, as many as 150 work in research and development.

This many employees devoted to R&D just underscores the important role R&D plays in our business unit. All told, half of our sales are realized with products that are younger than five years: Because customer desires change, new regulations are made, advanced processes make new solutions possible, and not least because our creative ideas for innovations are what drive us forward. We concentrate on products that are highly useful to customers, on the strength of innovation and flexibility, and on outstanding technological positions.

High performance polymers are moving into an ever-widening range of applications. Where wood and metal were once considered indispensable, plastics made to exact specifications are now in demand. This applies just as much to automotive parts as to sports articles, electrical and electronic appliances. As much to machines and equipment as to medical devices. People encounter the polymers of Degussa AG's High Performance Polymers Business Unit every day. The brands VESTAMID®, TROGAMID®, VESTODUR®, VESTORAN®, DYFLOR®, VESTENAMER®, VESTOSINT® and VESTAMELT® have been well known in the market for decades. The business unit also produces and sells the monomers that are the basic building blocks of these plastics.

Developing and manufacturing high performance polymers is just one of our jobs. Supporting customers in both word and deed is the other. For us, customer focus is more than a catchphrase, and service is more than just advice.

It doesn't matter where you need our support—we come to you anywhere in the world. Your partner in High Performance Polymers.



PRODUCT OVERVIEW



VESTAMID® L Series (PA 12)	— Polyamide 12
VESTAMID® D Series (PA 612)	— Polyamide 612
VESTAMID® E Series (PEBA)	— Polyamide elastomers
TROGAMID®	— Transparent special polyamides
VESTODUR® (PBT)	— Polybutylene terephthalate
VESTORAN® (PPE)	— Polyphenylene ether
DYFLOR® (PVDF)	— Polyvinylidene fluoride
VESTENAMER® (TOR)	— Transpolyoctenamer
VESTOSINT® (PA 12)	— PA 12 powder
VESTAMELT® (COPA, COPES)	— Copolyamide/copolyester powders and copolyamide granules
K & K Composites	— Plastic/rubber composites without adhesion promoters

® = registered trademark of Degussa AG



AUTOMOTIVE

Despite the fact that makes of cars are intended and sometimes conceived for specific regional markets, the automobile industry has had a global orientation for years. So has the parts suppliers industry. Whether in Korea or the USA—manufacturers of fuel lines, for example, in the most diverse countries face the same problems. This is why we've set up different working groups, whose members provide our overseas sales and you, our customers, with an equally high level of information, no matter the country.

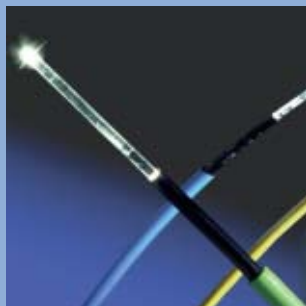
VESTAMID VESTODUR VESTORAN

Under normal conditions, the breaking system of a truck is subjected to as much as 12.5 bar of pressure. But for safety's sake, the brake lines must be able to withstand much more. **VESTAMID** brake lines hold out whether they're used in Siberia at -50° C or in the desert above 100° C and subjected to permanent UV rays, or whether they're sharply bent when installed. Approximately 150 meters of **VESTAMID** tubes of various diameters and wall thicknesses are laid in tractors and trailers: 150 meters that have the highest relevance to safety.

A fuel line should conduct fuel from the tank to the motor, not into the environment. Admittedly, this is a cliché—but one that has far-reaching consequences. This is why fuel line systems are subject to strict regulations and demanding standards. They must resist chemicals and be sealed perfectly so that no fuel penetrates the wall or seeps out onto the connectors. They must resist cracking or breaking in cold and heat, and during installation in the narrowest bending radii. Fuel lines and quick connectors made of **VESTAMID** meet these requirements completely. **VESTAMID** is trusted worldwide by the automobile industry.

But it's not the only high performance plastic made by Degussa that's found in cars. **VESTODUR**, for example, is used to manufacture the housings of coils. Among the advantages of this material is that it is so elastic that it can withstand the change between high and low temperatures without tearing. It also retains its shape very well and absorbs practically no water. And since it is especially heat-resistant, even spark plugs can't harm it. **VESTORAN**, another Degussa plastic, is used to make the secondary coil body inside the housing.





Like VESTAMID, VESTORAN is suitable for a very unique application: plastic and rubber composites. The manufacturing process for combining plastic and rubber is accomplished in one step—and without adhesion promoters—whereby you, the customer, can save up to half of the production costs. For example, the automobile industry conventionally manufactures spark plug housings in three parts—one steel tube and two joint rings. By using a special TROGAMID blend and a fluorocarbon polymer, the spark plug housings can now be manufactured automatically in one piece as a plastic-rubber composite. This plastic-rubber composite is also used in car door locks and in damping parts in the wheel suspension of cars.

Degussa has also developed a special product for easier processing of rubber compounds. Because of their raw materials characteristics, rubber compounds are often hard to mix and process. The usual processing agents used by the rubber industry reach their limits here. But not VESTENAMER. This polymer processing agent behaves like a plasticizer in the rubber compound during mixing and processing. But because it's an elastomer, it's completely integrated into the network during the final vulcanization of the formed piece of rubber and becomes rubber itself. An ideal solution to the problem.

Even fuel filters contain Degussa products: The thermoplastic hot-melt VESTAMELT holds the filter papers together permanently and anchors them to the filter housing. VESTAMELT also protects the heating filaments of seat heaters against slipping, even under high stress conditions.

The High Performance Polymers

Business Unit offers a complete system solution for the new communications technology in automobiles. The growing density of data from the increasingly advanced instrumentation integrated into cars calls for an especially effective data transport solution: optical fibers. Light is better suited than conventional copper cables for transmitting data, because it's faster and holds up better against electromagnetic disturbances. This goes for communications systems and for motor management, as well as the transmission of ABS and ESP signals.

For the demands of the automobile industry, an optical fiber made of plastic—a Polymer Optical Fiber (POF)—is protected by a two-layer jacketing system made of modified VESTAMID compounds. Because these materials are also suitable for laser welding, the optical connectors can be welded on directly. A good value in a complete solution from one source.

The key to all these high-quality products is the careful research we do to improve our products continuously. Years ago fuel lines were still one-layer plastic tubes. Today they are made of several layers in order to satisfy current requirements. The adhesion between the individual layers of the tubes is especially important. This is where we profit decisively from our knowledge of polymer bonds and by our development work.

For example, we've worked out extensive test procedures to ensure the safe use of our products. Fuel lines must undergo a 5,000-hour durability test. At the end of this test the fuel lines must be just as leak-proof and keep their fit as before. The tests are conducted in permeation test units developed by us at some expense: Know-how that we pass on to the end user.

For you, our customers, such testing means a high degree of safety. You know that the materials you get from Degussa are always in line with the specifications of the automobile industry. The contact between Technical Marketing and the automobile manufacturers guarantees this.





L A S E R T E C H N O L O G Y

The „e” on a computer keyboard is a sign of its quality. Statistically, the middle finger of the left hand hits this letter more often than any other. In spite of that, the key should be just as easy to read after several hundred thousand touches as when it was new, resisting both cleansers and hand care products. Because we want your customers to be satisfied with your product, we’ve developed special compounds for just such applications.

When it comes to working with lasers, precision is expected. This is exactly the focus of High Performance Polymers when it manufactures laser-markable polymer compounds—precision in inscribing computer keys, for example. In the right color, the desired type face, permanent, fast, rich in contrast and, above all, abrasion-resistant. Whether it’s Arabic, Hebrew, Japanese or Cyrillic—the laser doesn’t care: The ray of light dances over the key caps and in ten seconds has inscribed a complete keyboard according to regional requirements.

The characters become visible through a color change in the plastic caused by the laser’s precise heating of the surface. With Degussa’s laser-markable VESTODUR compounds this reaction happens because of a special additive for which we’ve owned a patent for years. This ensures characters with sharp contours that are rich in contrast. At the same time VESTODUR prevents the key cap from expanding during the marking process. The advantage here: Dirt and dust can’t settle so easily, and the individual characters don’t fade with intense use.

Well-known manufacturers have used laser-markable VESTODUR compounds exclusively for their keyboards. Not least for ecological reasons: Unlike many conceivable additives that are perhaps not so readily accepted into the environment or that may even be unhealthy, the additives patented by Degussa are completely harmless. This has been independently confirmed numerous times. It’s no coincidence, then, that an environmentally safe keyboard is made from VESTODUR.

LASER TECHNOLOGY

Obviously, letters are not the only thing a laser can write. It can also draw the dot matrix of a data matrix code, an application with great market potential in the field of electrical engineering. In this process, work pieces are marked in such a way that a wealth of encoded information is deposited onto a surface that's only a few square centimeters in size. A special reading device decodes, as needed, the seemingly chaotic jumble of lines and spaces. The marked parts permanently carry all the information that the user wants.

Such fraud-proof marks also gain more and more meaning with other applications, for instance for protection against brand pirates or for consumer protection. Even ear tags for animals can be made from laser-markable compounds.

Such developments can best be realized if we can understand how the application looks in all its details. This is why we in High Performance Polymers work closely with laser producers. We've even procured our own laser to help us find solutions to technical application problems and make additional advances. Whether it's letters, photos, data matrix codes or fraud-proof labels—whatever applications you want to see developed, you can always trust and rely on our extensive application know-how.



ELECTRICAL ENGINEERING



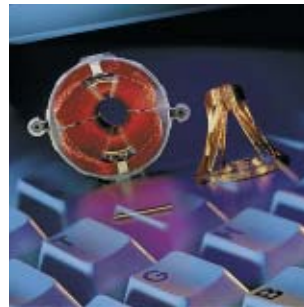
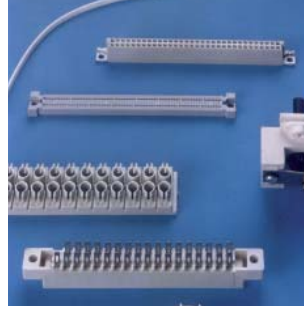
The application possibilities of high performance polymers in electrical engineering are as numerous as the specifications and licenses that the user has to deal with. This is why we in High Performance Polymers have relieved you of some of your work: We've compiled an extensive collection of data regarding specifications and characteristics, and prepared comparison tables that we update regularly—always with an eye to your application and specification problems. The result is a wealth of information covering all relevant areas of electrical engineering.



High voltage normally brings to mind peak capacity—and peak danger. But you can insulate high voltages with our track-resistant **VESTODUR** and **TROGAMID** compounds. The trend in electrical engineering is toward smaller and smaller components, like pin-and-socket connectors, relays or switches. The electrical contacts are so close in those components that better track-resistant compounds are needed to achieve the same insulation effect.

New manufacturing technologies like SMD (surface-mounted devices) or 3D MID technology (3D molded interconnected devices) allow many components to be soldered closely together on one circuit board. Temperatures on these boards reach 300° C for short periods, so the materials must be highly temperature resistant. With this in mind, we made our **VESTODUR** compounds cross-linkable without altering **VESTODUR**'s normal properties. Since these compounds are also easily plateable—over the entire surface or just part—they are outstanding for circuit boards, 3D molded interconnected devices and shielding for housings. Customers who use **VESTODUR** and the new manufacturing technologies save in three ways. First, **VESTODUR** compounds replace the more common, expensive plastics with high temperature stability. Second, less material is needed. Third, they save installation steps. For example, there's no need for separate built-in circuit boards and plug contacts, since these are directly integrated in the molded **VESTODUR** article.

The highest degree of safety is called for whenever electricity is involved. Our high performance plastics fulfill the most stringent requirements for fire protection, even with



thinner walls. Our non-migrating flame retardants protect metallic contacts against corrosion. Relay manufacturers, in particular, prefer our products because they avoid malfunctions. We've also developed halogen-free flame retardants for our customers. These products are used in cable insulation, for example, where the composition of the gases is particularly important when there's a fire.

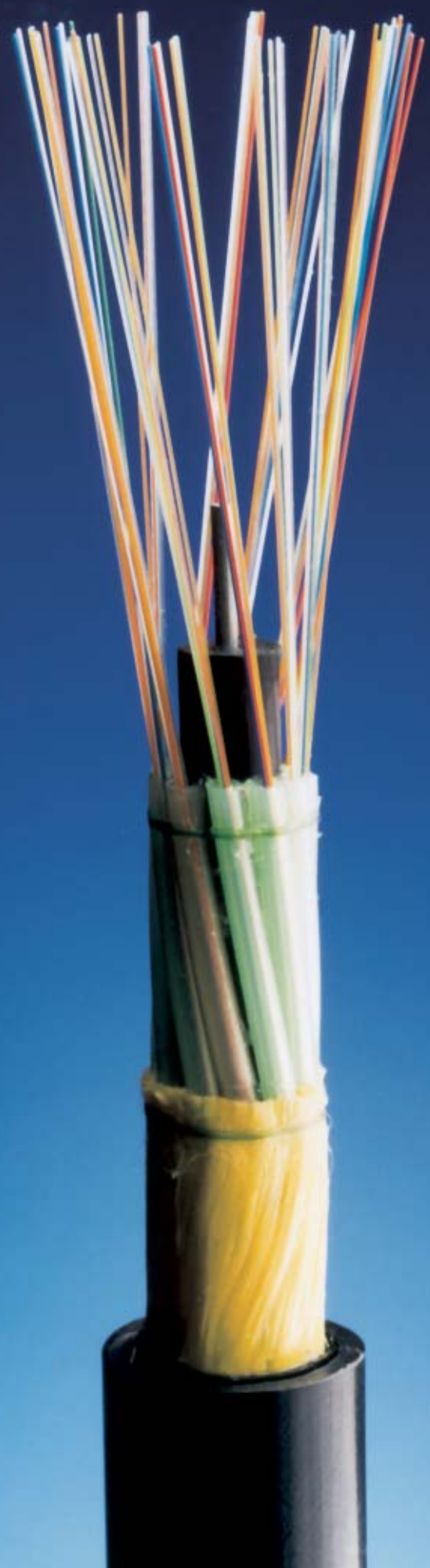
High picture quality doesn't just enhance the enjoyment of TV. Because many workplaces are now equipped with monitors, the quality of the monitors also makes our work easier. Deflection yokes made of **VESTAMELT** in the picture tubes prevent convergence problems and fuzziness. The high heat resistance of the hot-melt precludes deformation of the deflection yokes, even with prolonged use, and guarantees a distortion-free picture.



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SIGNAL ENGINEERING

It takes years of development work to be able to offer products that meet the high standards of quality of VESTODUR and VESTAMID. You, the customer, profit from this resultant know-how. In an environment of continuing advancements, we want to keep you as well as ourselves at the cutting edge of technology. For example, in the area of fiber optic cables, we work together with the producers of jellies and machines, offer seminars and continuing training, and take part in symposiums and fairs. What's more, you get the service from us that you want and need.



CABLE

These days, when someone makes a long-distance call, he might consider the costs or the quality of the connection, but he almost certainly never gives a moment's thought to the jacketing that covers the glass fibers in the communication cable. But it's exactly this jacketing that has so much to do with low costs and higher quality. It guarantees that the highly sensitive glass fibers are protected against mechanical stresses, that the fibers can't be buckled, and that they can withstand temperature fluctuations and chemicals.

With its **VESTODUR compounds**, Degussa AG is the worldwide market leader in optical fiber jacketing. **VESTODUR** can be processed with extraordinarily high production speed and perfectly meets the stringent profile of requirements for optical fiber jacketing.

Along with the **VESTODUR jacketing**, jelly is applied to the fibers during production as additional protection against moisture. A process with a great deal of experience behind it—know-how that was developed together with users and machine manufacturers over a period of years.



The field of telecommunication is developing with breathtaking speed. This has been made possible only through the constant evolution of cable construction. For Degussa, this means constantly confronting new challenges. Whether it's a question of dimensional stability, viscosity, chemical resistance or degradation behavior, we try to make everything better. For this reason, we are continually supplementing or replacing proven **VESTODUR** compounds with new materials that have even better properties.

Despite the meteoric market growth in the field of optical fibers, great quantities of copper cores are still used worldwide for communications and energy cables. And they, too, must have jacketing. **VESTAMID** and **VESTODUR** have a proven record here as well in special applications. But the cores themselves are not the only part of the cable that's protected with these high-performance plastics. Even the cable's outer jacket is made of **VESTAMID** for protection against termites and rodents.





M A C H I N E R Y A N D E N G I N E E R I N G

We in the High Performance Polymers Business Unit of Degussa AG not only sell high performance polymers. It is just as important to us to offer comprehensive service to you, our customers. When your products are successful, we've reached our goal.

We secure our market leadership in a number of fields with our mutual innovations.

MACHINERY AND

Some things are so obvious that you hardly think about them. For example, that water always comes out of the pipe with the same pressure. People would think about it only if it didn't happen that way. The fact that you don't have to think about it, though, is in large part thanks to **TROGAMID**. Filter bowls, found in almost every house installation, are made from **TROGAMID**. The filter unit is needed to keep pipe sediment—resulting from corrosion, for instance—and impurities, which could also damage the pipe over time, out of the drinking water. Combined with a pressure reducer, which reduces the water pressure downstream from the waterworks to the desired pipe pressure, the filter ensures constant water pressure and efficient use of water.

Naturally, the filter bowl must also be permanently transparent so that the filter element can be visually controlled at any time. The material must also be completely innocuous, since it constantly comes into contact with drinking water, our most important foodstuff. **TROGAMID** meets these standards. Filter bowls made of **TROGAMID** are technically state-of-the-art. They have been inspected under the regulations of the Deutsche Vereinigung des Gas- und Wasserfaches (German Association of Gas and Water) and were awarded with its inspection seal.

The list of TROGAMID's fields of application is long. No wonder: This polyamide compound is suitable for just about everything from viewing ports on electronic appliances or light barriers, to transparent housing parts, to containers for adhesives, greases or cosmetics. Of course, **TROGAMID** can also be colored any color, for example for joint rings of miniature batteries.

New application possibilities are always being added, so our researchers and application engineers are continuously developing the material family. In addition to the proven products of the T-line, completely new members of the family, the C-line materials, have been developed.

Products in the TROGAMID C line are distinguished by a stress cracking resistance superior to that of all other transparent materials. Combined with its excellent transparency, high impact strength and good weathering resistance, this material is tough enough to be used in light covers at gas pumps of service stations.





MEDICAL TECHNOLOGY

No question: When human lives are involved, high performance plastics must not only demonstrate excellent properties, they must meet very special, prescribed standards. Innovative research, modern production technology, and validated testing methods guarantee that our products meet these standards.





It's no coincidence, then, that **TROGAMID** is trusted in the area of medical technology, for example for the production of infusion equipment. The material must resist a number of chemicals and also ensure perfect function under extreme stress—there is no telling what the consequences of failure would be.

TROGAMID is, of course, inert, so it doesn't contaminate the medical solutions through released material. We've made sure of this through tests that follow the rigorous requirements of the United States Pharmacopeia (USP). The result: **TROGAMID** compounds used in the area of medical technology meet the highest standards in existence for these applications.

TROGAMID also plays an important role in the development and analysis of new types of medicines: The most diverse laboratory articles—from needle covers to connectors to housings and viewing ports for medical equipment—are produced from this transparent material.

But non-transparent polyamides like **VESTAMID** are also used in medical technology. For example, the material that goes into making catheters must be especially resistant to the chemicals of the medicines. At the same time, **VESTAMID** is compatible with body fluids, so it doesn't trigger a defensive reaction in the body. It also causes no skin or tissue irritation.

Beyond these characteristics, the handling of the finished catheter should satisfy certain requirements: It must be easy to direct, but shouldn't buckle. This calls not only for form stability, but a high degree of flexibility and bendability—characteristics that make **VESTAMID** the material of choice so that the application of the catheter is as gentle and pain-free for the patient as possible.



S P O R T S

When it comes to getting ahead, it isn't just professionals who rely on a very particular high-tech material. Atmosphere and feeling also play a role when the sports world becomes more and more colorful. Above all, the brands should be visible from far away and unmistakable in design. High performance VESTAMID and TROGAMID compounds are there to make high-tech and beautiful decoration possible. They win in icy cold on the ski-run or in the heated struggle for goals—thus proving their fitness for applications in other industries where the going perhaps isn't so tough.

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Sports articles must be able to stand up to extreme conditions, especially those involved with winter sports. The cold calls for not only high mechanical flexibility, but also de-icing sprays, waxes, cleansers or thawing salt to enhance the surfaces of skis and snowboards. VESTAMID compounds show themselves to their best advantage in these articles. In a film that withstands the cold and chemicals, for instance. As an outer coating, it completely locks with the sports article and protects the decoration and delicate inner material from scratches and damage from pointed ski sticks and polished edges. In addition to that, the decoration—often the name brand of the manufacturer of the article—shines in permanent brilliance because of the new procedure used to imprint the transparent VESTAMID film during production of the sports article.

In the sublimation process the decorations are first printed on special photographic paper. When the paper is pressed onto the VESTAMID film at approximately 150° C, the color pigments diffuse into the plastic. The paper is then pulled off and the film with the decoration is transferred down onto the snowboard or ski. The article is now effectively protected against all outside influences. Knifing, priming and protective varnishes are unnecessary. Thus, the film kills two birds with one stone: 80% of its function is protection of the surface, 20% is making it look good.

No wonder that VESTAMID decorative films have moved into other disciplines. Their protective characteristics are all-important for skis and snowboards. In the manufacturing of tennis rackets, the most important function, aside from strength, is the procedure for the decoration—an advantage that pays.

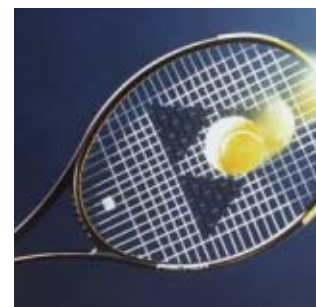
Reliability and safety also play important roles in sports activities. This is why many snowboard manufacturers rely on inspection windows made of TROGAMID for snowboard bindings. The reason: No other transparent material is so scratch resistant, impact resistant, rigid and chemical resistant.



VESTAMID elastomers are also used for shoes. The entire shell and tongue of ski and snowboard shoes are made of VESTAMID, making the shoes considerably lighter than those made with other materials. This has distinct advantages for the cross-country skier, for example. Also, the characteristics of the shoes will not change in extreme cold.

We frequently offer a complete system solution or develop one for our customers. For example, the soles of soccer shoes are made of VESTAMID elastomers, making the shoe lightweight. It moves with the athlete but always retains its original shape. The carriers for cleats, on the other hand, are made from VESTAMID reinforced with glass fibers. These compounds are rigid enough to anchor cleats strongly in the sole, and tough enough not to break during the winning goal. A successful combination of elasticity and extreme resistance.

Your requirements as the customer determine the direction in which we develop our plastics. Whether it's a tough bicycle-racing shoe whose glass fiber reinforced sole can easily be used to drive a nail into the wall, tennis shoes with viewing ports on built-in shock absorbers or sprinting shoes whose weight can only be compared with ballet shoes. Whether films for extravagant decoration, for improving functionality, for optimal protection or in-mold lamination by injection for easier and innovative production of a molded article. We develop the right compound for you and find the solution for your application—working with you, if possible.





L I F E S T Y L E

In our society good clothing is essential, whether on the job or off. But we rarely consider what a piece of clothing has to endure in its life. Jackets and suits are subjected to hard wear every day, whether during long car journeys or in the pouring rain. They are also washed, ironed, steamed and dry-cleaned.

And clothes should always retain their shape. This is ensured by **VESTAMELT** hot-melt adhesives, which are used invisibly as interlinings and to reinforce the material of suits, blouses or coats without affecting the textile character of the garment.

High performance adhesive bonds that resist heat well, with excellent resistance to detergents and cleansers are practical for the most diverse industries. The palette of technical applications extends from the securing of heating coils between non-woven inserts in automobiles to the connection of the glass panes in insulated glass windows, to use in acoustic ceilings and the bonding together of aluminum plates for lightweight construction materials, for example, for building cars.

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Who hasn't looked at a blackened, rusting shopping cart at some point and wondered, „Is this really the state of the art?“

It certainly isn't. A 300-micrometer-thick layer with corrosion resistance and wear-resistant fluidized-bed coating, **VESTOSINT** protects the steel against the weather. The coating is not only easy to clean and thus especially hygienic, it can also be a marketing strategy in the house colors of the retailer. Coatings made from the Polyamide 12 powder **VESTOSINT** have proven themselves for years in the washing baskets of dishwashing machines.

As a fine powder, **VESTOSINT** is added to cold- and hot-curing structural coatings alike. This ensures that the coating itself doesn't crack with bumps or knocks. The coating is especially elastic, resistant to bending and very abrasion resistant. These are characteristics that, for example, ensure that painted roller shutters look good for years. **VESTOSINT** enhances this through a uniformly fine structural surface and satin luster.

It's no wonder, then, that the fine powder is also in demand in the cosmetics industry. In face powders, lipsticks, creams or deodorants



they are carriers for perfume substances, vitamins, UV filters or pigments. They prevent sweating, absorb sweat and oil on the skin, and decrease shine. And thanks to **VESTOSINT's** round-shaped particles, it not only looks good, it feels good.

Looking good and seeing well go hand-in-hand when fashion designers and eyewear designers discover **TROGAMID** for their products. These resins are transparent and inherently neutral in color. This gives designers the freedom to follow modern trends in transparent as well as brilliantly colored frames. The mechanical characteristics of frames manufactured from **TROGAMID** are excellent. They are exceedingly robust yet flexible and adaptable.

Thanks to these kinds of advantages, glasses can be constructed with **TROGAMID** that until now could only be made with titanium alloys. There are more possibilities than ever for the designer, whether for sunglasses and sports glasses or for other optical applications, especially for children's glasses. Skin irritations by the material are practically eliminated—**TROGAMID** is even used in the field of medical technology.

Because of its good optical characteristics and high resistance to chemicals, **TROGAMID** is also excellent for manufacturing lenses for sports and sunglasses.





MONOMERS

Our high performance polymers are only the end of a chain of value-added activities that begins with the dimerization and trimerization of butadiene.

Degussa is the only company worldwide that markets the entire palette of the secondary products based on butadiene.

For this we can rely on our 30 years' experience—and the know-how that comes from it.

The industry uses the monomers we produce in the manufacture of flame retardants, perfumes, agricultural chemicals and surfactants, as well as intermediates for the pharmaceuticals and paint industries.

QUALITY AND THE ENVIRONMENT

The success of a company means more than a good operating result. It is also all about quality and the highest standards for safety and environmental protection.

The High Performance Polymers Business Unit, together with the entire Marl site, was validated in 1997 under the EU Eco-Audit (EMAS) regulations. It was also certified according to ISO 14001 for several other activities at the end of 2000. The management system—certified to DIN EN ISO 9001 since 1992—is constantly being optimized. The positive resonance among our customers is palpable. Nearly all rated our services and the management system in the highest category. We are also proud that since April 2000 our activities with most products have been certified under the particularly prestigious standards of QS 9000 of the US automobile industry.

Such performance cannot simply be made to order. It can be achieved only when all employees work together for one goal. This is why we have it anchored in our guidelines that the standards for quality and occupational safety and for environmental protection are always at the center of everything we do. For us, economy, environmental protection, safety and quality are equal goals in all business activities. The key word is responsibility. Responsibility for people, the environment and for the shareholders in the spirit of Responsible Care. Responsibility that each individual accepts as part of his work. He fulfills this responsibility with professional competence, creativity and a talent for innovation.

We regard our customers, suppliers and service providers as partners. We measure our success by how well we meet our customers' demands. Our management system helps us in the ongoing improvement of our services for your benefit.



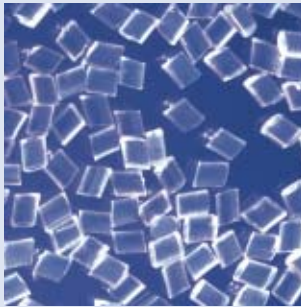
Some products and processes are occasionally also assessed from very specific points of view. The production of cyclododecanone has been approved by the North Rhine regional rabbi. The basic question was whether the substance is kosher. The answer is a resounding Yes. A certificate confirms that cyclododecanone or appropriately produced secondary products are allowed to come into contact with kosher food.



S E R V I C E

- Materials consultation
- Supplying test material
- Intensive project consultation
- Individual compounds, concepts and advancements
- Tool design (CAD, CAE)
- Assistance with construction and processing technology
- Analyses and tests
- Assistance with measuring methods (for example, for quality control)
- Standardization and licensing
- Determining appropriate machine or parts suppliers
- Recycling consultation
- Safety issues

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SYSTEM SOLUTIONS FROM PLANNING TO SERIES MATURITY

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Finding the right material, assisting you

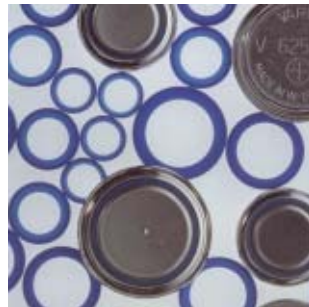
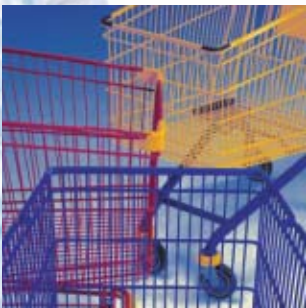
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