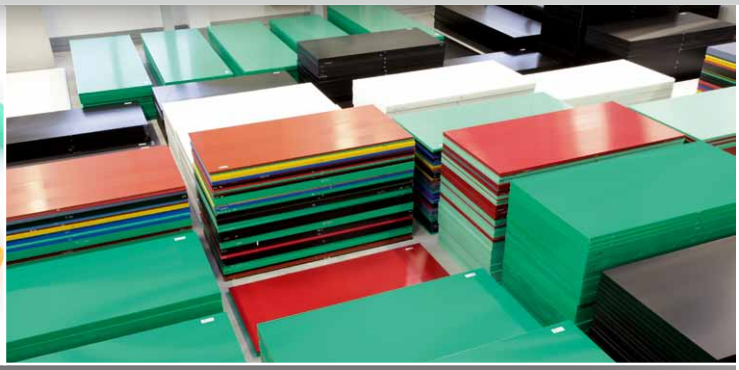
PLASTICS





PLASTICS – TABLE OF CONTENTS

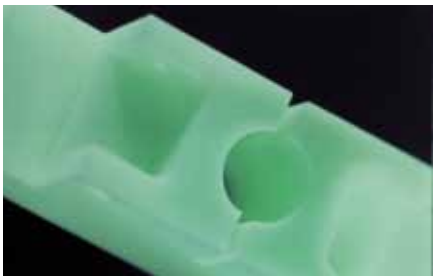
PLASTICS

The best material for every application

Our range constitutes the basis for optimized machining and production processes and includes specially designed materials that are carefully tuned for use in an extremely wide range of applications.

The most important factors of our materials' success	Our service
Excellent slide properties	Pre-cut custom parts from sheets and rods
High wear resistance	Individual solutions
Great mechanical and chemical resistance	Large warehouse stock of semi-finished parts with different dimensions
Long lifetime	Short delivery times thanks to ample warehouse capacities

Plastics for use in the food industry :: EC Regulation 10/2011, which has been in force since 2011, currently forms part of EC Regulation 1935/2004. It stipulates rules for dealing with materials and items made from plastic and intended to come into contact with foods. Murtfeldt has certified its relevant plastics and now indicates materials which are suitable for contact with foods using the letters **[FS] „Food Safe"**.



Group "S"® Plastics :: This Murtfeldt group of plastics was developed on the basis of the tried-and-tested Original Material "S"® green. These materials are made from high-quality UHMW polyethylene. They boast properties that have been specifically adjusted for various application areas.

Technical Plastics :: Each sector and application has specific requirements for machines and plants. Quality is important in even the smallest components, since it influences subsequent production and machining processes. We have always concentrated on the task of developing forward-looking products for a wide application spectrum. Our technical materials are primarily characterized by good slide properties and high wear resistance. This means that we are able to guarantee a long lifetime for our materials and low maintenance requirements for your plants.

High-Performance Plastics :: Our high-performance materials are designed to meet unusual requirements and high stresses and stains. They are the result of the consistent development of our technical materials. They are characterized by exceptional chemical, mechanical, and thermal resistance and resilience in situations of dynamic stress. Murtfeldt high-performance materials are therefore ideally suited for extremely customized tasks.

REGULATION (EC) NO. 1935/2004

What's allowed in food products?

Plasticisers in olive oil or pesto sauces, heavy metals from ceramic glazes, and ink components in drinks: Unappetising or even unhealthy examples of food impurities that really make consumers see red. But in fact, there are justifiable and functional reasons why foods come into contact with certain substances. This might be during production with special machines, during filling, whilst being transported in designated containers, during storage, or whilst being delivered.

Nevertheless: There are risks involved in the interaction of foods and impurities, and these risks must be kept to a minimum. Since 2004, Regulation (EC) No. 1935/2004 – which is still in force today –has governed these risks. Its most important relevant statement here: Raw materials and items must be manufactured in a way that ensures that – in normal, foreseeable usage conditions – their components only pass into foods in levels that cannot endanger the health of the consumer.

REGULATION (EU) NO. 10/2011

New requirements for manufacturers of plastics

In January 2011, the European Commission adopted a new regulation on materials and items made from plastic and intended to come into contact with foods. This new regulation – Regulation (EU) No. 10/2011 – is in force since the 1st of May 2011 and forms part of Regulation (EC) No. 1935/2004.

Its most important content?

A list of source materials (monomers) and a list of auxiliary materials (additives) that can be used to manufacture plastics
Migration processes based on limit values and purity specifications
Conformity declarations
Batch tracking
Manufacturing as per Regulation (EC) No. 2023/2006 (Good Manufacturing Practice)

WHAT IS THE MEANING OF...

EU CONFORMITY?

It is confirmed by the manufacturer/entity placing materials on the market in accordance with Regulation (EU) No. 10/2011.

Constituent substances must comply with the Union List as set out in the regulation.

Specific and global migration must be tested on the finished product by an independent, accredited laboratory.

Traceability must be assured at every stage.

It is compulsory within the EU.

FDA CONFORMITY?

It is confirmed in accordance with Title 21 of the Code of Federal Regulations (CFR) issued by the U.S. Food and Drug Administration (FDA).

The recipe/constituent substances are deemed and confirmed as individual substances in accordance with the Positive List.

It is compulsory within the United States of America.

LET'S GET DOWN TO THE NITTY-GRITTY!

Which source materials and additives can be used?

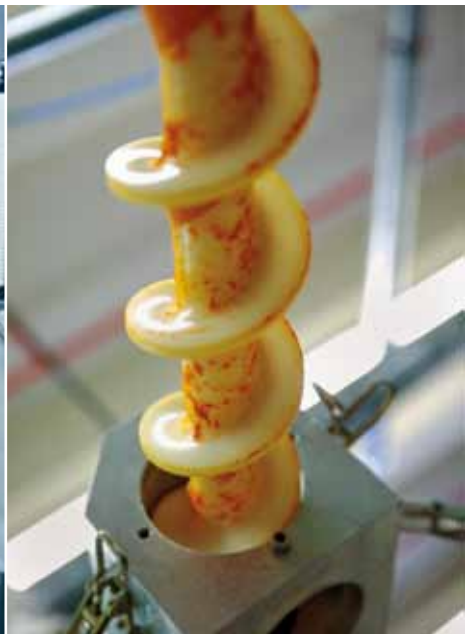
The substance lists for monomers and additives contain more than 900 source materials that are approved at EU level. Only these substances may be used to manufacture materials and plastic products in accordance with their specific migration values.

What happens in the "migration process"?

For plastics, there are substance-specific limit values for the transition of these substances to foods. These are called "migration values". These values are determined by means of migration tests that are carried out by independent institutions. If the result of a migration process is successful, the manufacturer is entitled to issue the required certificate of conformity for the outgoing goods.

A declaration of conformity is valid until changes are made to the composition of the material or to the production process that consequently alter the migration of substances from the material or plastic product or until new scientific knowledge is available. The migration process consists of two tests:

Part of the migration process is the overall migration limit test (OML) and the specific migration limit test (SML). In the case of the overall migration limit, the total of all migrating substances may not exceed 60 ppm. The specific migration test determines specific migration values for individual monomers and additives cited in the regulation on plastics.



THE DECLARATION OF CONFORMITY

In accordance with the stipulations of the new EU regulation, each manufacturer or importer of commodities that are made from plastics and that come into contact with foods must enclose a written declaration of conformity with each product.

The main aim of this declaration of conformity is to enable the easy identification and thus traceability of the used materials for which it is issued. It should ensure that there is sufficient information on the substances used and their decomposition products over the entire supply chain as well as information on the use of the material.

THE TRACEABILITY

In other words: Where did the plastic come from?
And where is it going to?

The following was mentioned already in the section on the declaration of conformity: Traceability. This refers to the mandatory requirement to identify an item and enable the tracing of its manufacturing, processing, and sales stages. In each case, at least one prior and one subsequent stage must be identifiable. This is achieved by labelling the plastic and placing information on the manufacturer, date of production, production process etc. on the label.

GOOD MANUFACTURING PRACTICE (GMP)

Quality management

Good Manufacturing Practice (GMP) – which means ensuring good production by means of quality assurance – emanates from Regulation (EC) No. 2023/2006, which is embedded in Regulation (EC) No. 1935/2004. According to this concept, manufacturing is a part of a quality system that ensures the safe and traceable production of products in the pharmaceutical and food industries. In practice, an ISO quality system that is already in place must be supplemented by the GMP directives.

The pages above have made one thing clear: The new regulation requires companies to make a high investment in time, employee know-how, and capital. Murtfeldt Plastics has risen up to meet these challenges, and was able to conclude the required migration processes for its products that are intended for use in the food industry. The below mentioned plastic are approved for use according the EU regulation as well as FDA regulation.

Overview of Murtfeldt PE plastics that are approved for use in the food industry as per Regulation (EC) No. 1935/2004 and Regulation (EU) No. 10/2011

Original Material "S"® green [FS]®
Production based on PE-UHMW SG 1.2

Original Material "S"® natural [FS]®
Production based on PE-UHMW SG 1.2

Original Material "S"® black [FS]®
Production based on PE-UHMW SG 1.2

Original Material "S" plus+® FP [FS]® (sky-blue)
Production based on PE-UHMW SG 1.1

Original Material "S" plus+® LF [FS]® (cobalt blue)
Production based on PE-UHMW SG 1.1

Original Material "S" plus+® LF ESD [FS]® (black)
Production based on PE-UHMW SG 1.1

Original Material "S" plus+® AB [FS]® (sky-blue)
Production based on PE-UHMW SG 1.2

Original Material "S" plus+® TLS [FS]® (ruby red)
Production based on PE-UHMW SG 1.1

Original Material "S" plus+® GB [FS]® (light-green)
Production based on PE-UHMW SG 1.1

Original Material "S" plus+® ESD [FS]® (black)
Production based on PE-UHMW SG 1.2

Muralen® green [FS]®
Production based on PE-HMW SG 2.1

Muralen® natural [FS]®
Production based on PE-HMW SG 2.1

Muralen® black antistatic [FS]®
Production based on PE-HMW SG 2.1

Muralen® coloured [FS]®
Production based on PE-HMW SG 2.1

Muralen® plus+AB [FS]® (sky-blue)
Production based on PE-HMW SG 2.1

Overview of Murtfeldt technical plastics that are approved for use in the food industry as per Regulation (EC) No. 1935/2004 and Regulation (EU) No. 10/2011

Murlubric® blue [FS]®
Production based on PA6C/Oil

Murylon® B natural [FS]®
Production based on PA6

Murylon® A natural [FS]®
Production based on PA66

Murytal® C natural [FS]®
Production based on POM-C

Murytal® C blue [FS]®
Production based on POM-C

Murylat® [FS]® (natural and black)
Production based on PET

Murylat® SP [FS]® (light-grey)
Production based on PETP

Overview of Murtfeldt high-performance plastics that are approved for use in the food industry as per Regulation (EC) No. 1935/2004 and Regulation (EU) No. 10/2011

Murinyl® [FS]® natural
Production based on PVDF

Murflor® [FS]® natural
Production based on PTFE

Murinit® SP [FS]® (blue)
Production based on PPS-SP

Murpec® natural [FS]®
Production based on PEEK

[FS] ("food-safe") will be added to the names of these products. In addition, on request Murtfeldt is able to carry out individual migration tests for customers for other colours or types of technical plastics.

If you require more detailed information on the content of Regulation (EC) No. 1935/2004 and Regulation (EU) No. 10/2011, please visit us at murtfeldt.com!

ORIGINAL MATERIAL ”S”® green / ORIGINAL MATERIAL ”S”® natural
ORIGINAL MATERIAL ”S”® green [FS]®/ ORIGINAL MATERIAL ”S”® natural [FS]®

Since the 1950s, Material ”S”® has been tried and tested a thousand times over for a wide range of applications in power engineering and conveyor technology.

Material ”S”® is based on virgin, ultra-high molecular weight low pressure polyethylene and significantly exceeds the requirements of DIN 16972. Original Material ”S”® is one of the most successful groups of materials in the industrial plastics sector.

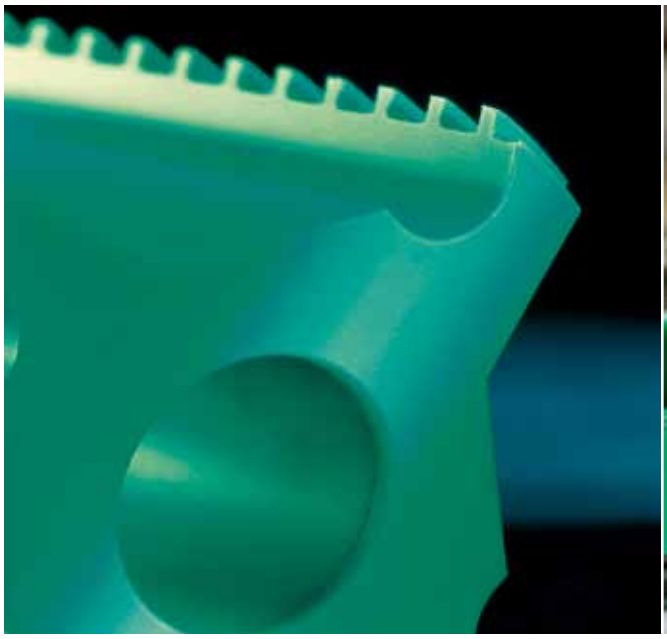
In particular, Original Material ”S”® green has established itself as a branded product in the plastics sector. It is used in all applications where a technical, high-performance plastic is required. Original Material ”S”® green is synonymous with excellent slide properties, high wear resistance, and a long lifetime.

SPECIAL PROPERTIES

- Extremely high wear resistance – even in abrasive applications
- Excellent slide properties
- High impact strength
- Extremely good resistance to chemicals
- Excellent shock and impact absorption
- Good anti-adhesion properties
- No moisture absorption
- Available in all RAL colours (minimum purchase quantity of 600kg for materials not kept on stock)
- Electrically isolating (”S” green, natural, and colours)
- Approved for use in the food industry (EU and FDA)
- Original Material ”S”® is also available with a molecular weight of up to 9 million g/mol.

POSSIBILITIES OF USE

- Slide bearings
- Chain guides
- Highly wear-resistant antistatic slide segments
- Slide profiles



ORIGINAL MATERIAL "S"® black
ORIGINAL MATERIAL "S"® black [FS]®

Original Material "S"® black has the same properties as Original Material "S"® green/natural. In addition, it is also electrostatically conductive due to the addition of additives.

SPECIAL PROPERTIES

- Extremely high wear resistance – even in abrasive applications
- Antistatic
- Excellent slide properties
- High impact strength
- Very good resistance to chemicals
- Excellent impact/shock resistance
- Good anti-adhesion properties
- No moisture absorption
- Suitable for all devices and machines that are subject to Directive 94/9/EC (ATEX 95)

POSSIBILITIES OF USE

- Belt guides
- Highly wear-resistant antistatic slide segments
- Slide profiles

MATERIAL ”S”® 1000

This material is exclusively produced from ultra-high molecular weight polyethylene powder that is mixed with finely milled Original Material ”S”®. The mixing process is computer-monitored. The fine milled material is compression-moulded at high pressure and temperatures to form new semi-finished products. This results in a high-quality material with an exceptional price/performance ratio that is characterized by exceptional abrasion resistance and good slide properties. Material ”S”® 1000 is physiologically safe.

SPECIAL PROPERTIES

- Good wear resistance properties
- Good slide properties
- Good anti-adhesion properties
- No moisture absorption
- Electrically isolating (Original Material ”S”® 1000 green)
- Antistatic (Original Material ”S”® 1000 black)
- Economical environmentally friendly

POSSIBILITIES OF USE

- Slide bearings
- Chain guides
- Wear-resistant slide segments
- Slide profiles

MURALEN®
MURALEN® [FS]®

Muralen® is based on high molecular weight polyethylene (PE-HMW) and is ideally suited for use in applications that require the generally impressive material properties of polyethylene. However, it is only used in cases where the excellent slide and wear resistance properties of Original Material "S"® are not required. Because of its great cut, impact, and shock resistance, this material is often used to make underlays for cutting and punching machines and for ram guards.

MURALEN®
black antistatic
MURALEN®
black antistatic [FS]®

This material has the same properties as Muralen® but also has an antistatic effect.

POSSIBILITIES OF USE

- Chopping boards/underlays for cutting machines
- Ram guards in supermarkets, cold stores, and abattoirs

MURALEN® plus+ AB
MURALEN® plus+ AB [FS]®

This material has the same properties as Muralen® but also has an antimicrobial effect.

SPECIAL PROPERTIES

- High cut resistance
- Good shock and impact absorption
- Good resistance to chemicals
- Good anti-adhesion properties
- Approved for use in the food industry (EU and FDA)
- Available in all RAL colours (minimum purchase quantity of 600kg for materials not kept on stock)
- Good weldability
- Antibacterial properties (Muralen® plus+ AB)
- Antistatic (Muralen® Black)

ORIGINAL MATERIAL ”S” plus +® ESD
ORIGINAL MATERIAL ”S” plus +® ESD [FS]®

Thanks to its extremely low electrical resistance, Material ”S”® plus+ ESD is an optimum conductor. Full voltage dissipation for earthed components at maximum speed enables safe, spark-free work. This material provides a cost-effective alternative to carbon-filled PTFE.

SPECIAL PROPERTIES

- Very good conductivity (surface resistance of < $10^4\Omega$)
- Voltage dissipation on surface in less than 0.1s
- Cost-effective alternative to carbon-filled PTFE
- Suitable for devices and machines subject to Directive 94/9/EC (ATEX 95)
- Approved for use in the food industry (EU and FDA)

POSSIBILITIES OF USE

- In the automotive and semiconductor sectors as, for example, full-surface sliding bases for modular link belts
- As work piece carriers for sensitive electronic components

ORIGINAL MATERIAL "S" plus +® LF
ORIGINAL MATERIAL "S" plus +® LF [FS]®

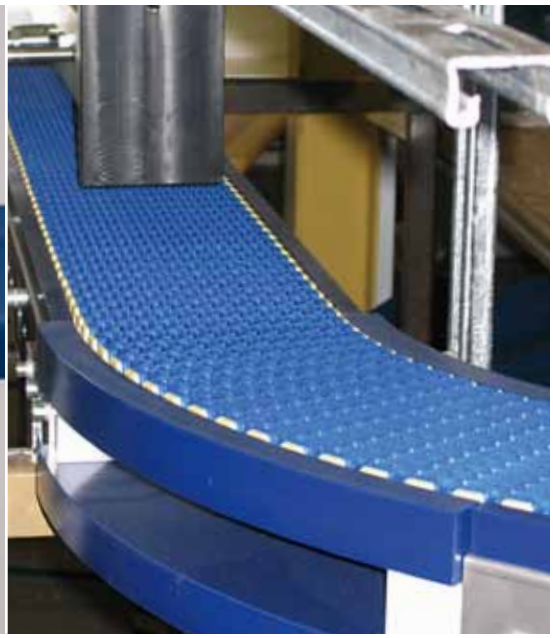
When developing this material Murtfeldt managed to further slash the sliding friction coefficient by half. The particularly great feature of this material is that this value is constant and is achieved even at low friction intensities. The required driving force is drastically reduced, meaning that your motors need less energy and are thus significantly more economical to run. This innovative material enables an increased machine running speed at the same time as less abrasion and thus a lower maintenance requirement. As a result, the material significantly contributes to an increase in your productivity.

SPECIAL PROPERTIES

- Constantly low sliding friction coefficient during operation
- Energy saving of up to 50 %
- No stick/slip effect
- Self-lubricating
- Protects the sliding partner
- Excellent acoustic insulation
- No water absorption
- Reduction in drive power with no reduction in performance
- Approved for use in the food industry (EU and FDA)

POSSIBILITIES OF USE

- Guides for PET bottle conveyors
- Ideal wherever high slide speeds are required



ORIGINAL MATERIAL ”S” plus +® LF ESD
ORIGINAL MATERIAL ”S” plus +® LF ESD [FS]®

The use of this plastic saves energy and improves the efficiency of your machines thanks to its low friction resistance. The sliding friction coefficient is reduced by up to 50 percent with this material – and so too the energy consumption for the drive power required. This plastic offers real energy-saving potential. Thanks to the additive used, Original Material ”S”® plus+ LF ESD is electrically conductive, enabling voltage to be dissipated at maximum speed with the same maximum friction resistance.

SPECIAL PROPERTIES

- Extremely high conductivity
- Voltage dissipation on the surface in less than 0.1s
- Reduction in drive power with no reduction in performance
- Saves up to 50 % energy
- Minimal and constant sliding friction coefficient even in continuous operation
- Self-lubricating
- Approved for use in the food industry (EU and/or FDA)

POSSIBILITIES OF USE

- As a solid sliding base in the semi-conductor industry
- For modular chain and conveyor belts
- Guides for PET bottle conveyors
- As workpiece carriers for sensitive electronic components
- Guides and slide elements for machine construction

NEU

ORIGINAL MATERIAL "S" plus +® LFP ESD

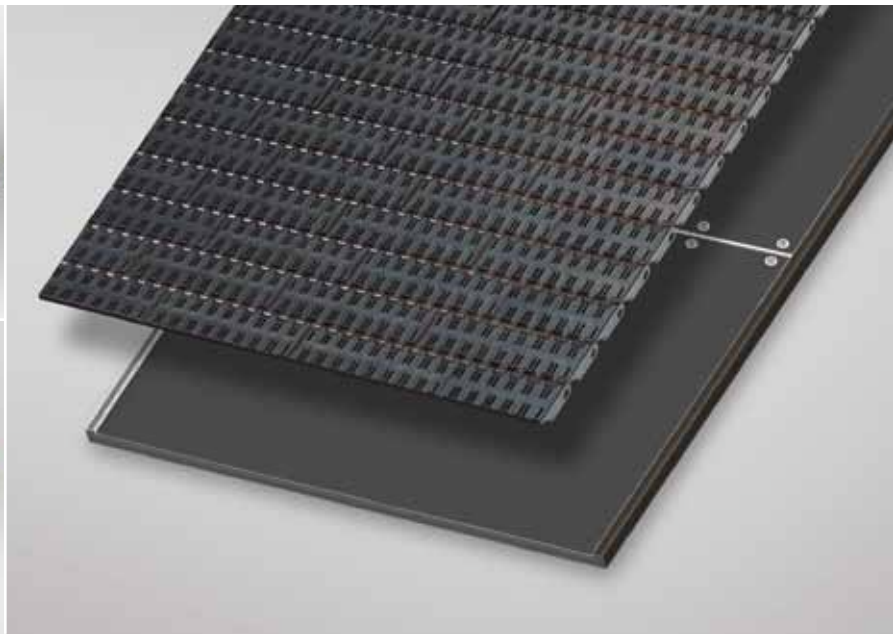
Like its „siblings" Original Material "S"plus+® LF and LF ESD, this plastic also impresses users with its low-friction properties and high wear resistance thanks to a constantly low sliding friction coefficient. In particular, its slide optimization properties come into their own with a sliding partner made from POM or PP, enabling an increased dynamic load-bearing capacity for conveyors in comparison with Original Material "S"plus+® ESD. At the same time, abrasion and thus the maintenance intensity are reduced. However, unlike the two „LF" materials, Original Material "S"plus+® LFP ESD has no additive containing silicone. For this reason, this material is particularly suitable for use in the automotive sector, where attitudes towards substances that are detrimental to paint adhesion are particularly critical.

SPECIAL PROPERTIES

- Electrical conductivity (compliant with ATEX 95)
- Free from substances that disrupt paint adhesion
- Very good slide properties when used with POM and PP
- Very good wear and abrasion resistance
- Self-lubricating
- Low and constant sliding friction coefficient, even in continuous operation
- Up to 50% energy conservation
- Increased dynamic load-bearing capacity

POSSIBILITIES OF USE

- Use in production plants for the automotive industry
- Sliding base for slat band chains, modular link belts, and much more



MATERIAL "S"® 8000

This material results from the further development of a tried-and-tested material. Experiences of over 50 years of producing Original Material "S"® have contributed to the development of this material. This involved improving already impressive material properties. For example, the self-lubricating character of this material has resulted in an improved sliding friction coefficient in comparison with Original Material "S". Original Material "S"® 8000 is ideally suited for use in sliding guides, slide segments, and slide bearings.

SPECIAL PROPERTIES

- Self-lubricating - lower sliding friction coefficient
- Increased wear resistance
- Excellent impact/shock resistance
- Good resistance to chemicals
- Good anti-adhesion properties
- Electrically isolating
- Better resistance to UV rays than Original Material "S"® green/natural

POSSIBILITIES OF USE

- Highly wear-resistant slide elements
- Sliding guides, slide segments, and sliding bearings

ORIGINAL MATERIAL "S"® plus+ Bright ESD

For the first time, it has been possible to develop a light plastic with high conductivity and a voltage-dissipating effect on earthed components. This combination was not previously possible. This material is ideal for use in applications where a high value is placed on hygiene and antistatic characteristics.

In many work environments, light surfaces are mandatory. The conductivity of Material "S"® plus+ Bright ESD provides optimum safety. Its properties largely match those of Material "S"® plus+ ESD.

SPECIAL PROPERTIES

- Very good conductivity (surface resistance of ≤ $10^5\Omega$)
- Ideally suited to light, dust-free environments
- Suitable for devices and machines subject to Directive 94/9/EC (ATEX 95)

POSSIBILITIES OF USE

- Clean room technology
- Medicine
- Laboratories

ORIGINAL MATERIAL ”S” plus+® AB
ORIGINAL MATERIAL ”S” plus+® AB [FS]®

Material ”S”® plus+ AB contains special substances that prevent the growth of bacteria and other microbes at the same time as protecting the environment and people. The material is thus ideally suited for use when manufacturing and processing foods. It can reduce the growth of microbes on surfaces by between 99.96 to 99.99 % in comparison with materials with no special additives. This means that it can virtually eradicate unpleasant smells and the formation of biofilms. ”S”® plus+ AB combines antibacterial properties with the exceptional characteristics of the ”S”® plus+ range.

SPECIAL PROPERTIES

- Reduces bacteria and microbe growth by around 99.99 %
- Approved for use in the food industry (EU and FDA)
- High wear resistance
- Long lifetime
- Good resistance to chemicals
- Good acoustic insulation
- No moisture absorption

POSSIBILITIES OF USE

- Curve and chain guides and slide bars or components in the food and beverage industry (especially in the meat sector and in dairies and breweries)
- Slide and drive elements in medical and food technology
- In areas where high standards of hygiene are required, such as the storage and handling of food, cosmetics, and drugs

ORIGINAL MATERIAL "S" plus +® FP [FS]®

Original Material "S"® plus+ FP [FS] is a new technical plastic that completely meets the requirements of the food sector for the detectability of plastic foreign bodies in foods. "FP" stands for "food protect" and embodies two vital properties: This product is both food-safe and metal-detectable. Metallic foreign bodies in foods are safely detected by metal detectors and removed. However, plastic particles from plant components can be problematic. Thanks to the use of additives in Original Material "S"® plus+ FP [FS], all commonly used metal detectors in the food industry can now detect and remove plastic particles.

SPECIAL PROPERTIES

- Metal-detectable in all commonly used industrial detectors
- Approved for use in the food industry (EU and FDA)
- Very good wear and abrasion resistance
- Extremely good machinability
- Excellent chemical resistance
- Increased continuous use temperature of 100°C

POSSIBILITIES OF USE

- Curve and chain guides, slide bars, or components used for food production/in the beverage industry
- Slide and drive elements in medical and food technology
- In all areas where hygiene and metal-detectability are required

Information on its use

The detection capability of Original Material "S"® plus + FP [FS] is determined by the "product effect" of the products to be tested and the sensitivity of the detector. As a precise adjustment of your detector is required, we will be happy to send you test samples of our Original Material "S"® plus + FP [FS].

ORIGINAL MATERIAL ”S” plus +® GB
ORIGINAL MATERIAL ”S” plus +® GB [FS]®

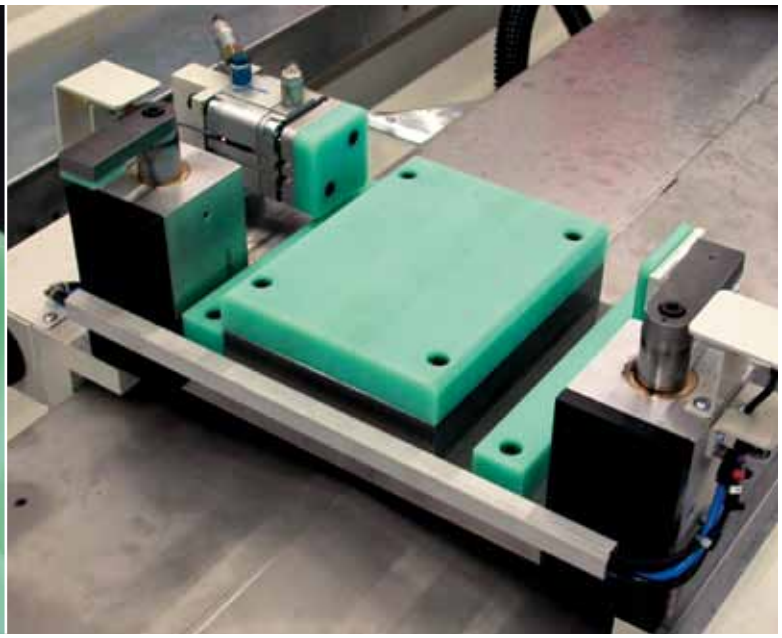
This material is used for applications that involve manufacturing and transportation at high pressure. The balanced quantity of micro glass beads in Material ”S”® plus+ GB provides the combined benefits of extremely high molecular weight polyethylene and glass. The glass beads that protrude from the surface give a rounded and hard sliding surface.

SPECIAL PROPERTIES

- Protects the sliding partner (unlike glass-fibre reinforced plastics)
- Extremely good resistance to chemicals
- Approved for use in the food industry (EU and FDA)

POSSIBILITIES OF USE

- Guides for PET bottlenecks in the beverage industry
- In abrasive environments (for example, environments where lint is present)



ORIGINAL MATERIAL "S" plus +® TLS
ORIGINAL MATERIAL "S" plus +® TLS [FS]®

Industrial applications are often subject to high temperatures at which Original Material "S"® could previously not be used. Such applications require materials with familiar characteristics such as wear, impact, and chemical resistance. The new Original Material "S"® plus+ TLS now offers – for the first time – a material that can be used in situations for which Original Material "S"® was not suited. Even at high operating temperatures of up to 120° C for short periods of time and constant service temperatures of up to 100° C, the molecular structure of this ultra-high molecular weight low-density polyethylene does not change. This is because the thermal oxidation point has been increased through the use of a newly developed additive. "S"® plus+ TLS is thus suitable for a wide range of industrial applications that are subject to sustained high temperatures.

SPECIAL PROPERTIES

- Increased constant service temperature of 100° C
- Extremely good wear and abrasion resistance
- Excellent resistance to chemicals
- Excellent machinability

POSSIBILITIES OF USE

- Slide and guide elements for many different industrial applications in the middle temperature ranges, e.g. drying ovens and chain trough conveyors.

MURLUBRIC®

MURLUBRIC® blue [FS]®

Mineral oil is integrated into this modified cast polyamide during polymerization. As a result, the material has self-lubricating properties and retains its excellent characteristics for its entire lifetime. This significantly reduces operating and maintenance costs.

This material has practically the best slide properties of our entire range. In addition, Murlubric® is extremely wear-resistant and is suitable for use in high-stress slide and wearing applications even at high speeds.

Murlubric® blue [FS] is approved for use in the food industry (EU and FDA) compared with black Murlubric®.

SPECIAL PROPERTIES

- Excellent slide properties
- Wear-resistant, even in abrasive applications
- High mechanical strength
- Self-lubricating
- Vibration-free running
- Low residual stress
- Good lubricant resistance
- High dynamic load-bearing capacity

POSSIBILITIES OF USE

- Rollers
- Highly-stressed slide elements (lifetime is 5 to 10 times longer than for normal polyamide)
- Chain guide rails
- Radial sliding bearings
- Murlubric® blue [FS] is approved for use in the food industry (EU und FDA/only [FS] type)

MURYLON® B
MURYLON® B natur [FS]®

Murylon® B natural has the best impact resistance of all Murylon materials. This material is especially suited for use in machine construction thanks to an excellent combination of mechanical properties.

SPECIAL PROPERTIES

- Exceptional resistance
- Good impact strength
- Low cold flow characteristics
- Approved for use in the food industry (EU and FDA)

POSSIBILITIES OF USE

- Rollers
- Slide bearings
- Parts subject to high impacts and shocks

MURYLON® A
MURYLON® A natur [FS]®

This material combines the excellent properties of the Murylon® range with additional high tensile and compressive strength, increased wear resistance, and a lower level of moisture absorption than Murylon® B.

SPECIAL PROPERTIES

- Better wear resistance than Murylon® B
- Improved tensile and compressive strength
- Better temperature resistance than Murylon® B
- Extremely good fatigue strength
- Low cold flow characteristics
- Approved for use in the food industry (EU and FDA)

POSSIBILITIES OF USE

- Rollers
- Slide bearings
- Slide elements
- Components under varying stress
- Parts subject to high impacts and shocks

MURYLON® A GF

The properties of this material surpass the already impressive characteristics of Murylon® A. This is possible thanks to admixed glass fibres. The result: a clear improvement in cold flow behaviour and dimensional stability. This enables higher static pressure loads to be endured.

SPECIAL PROPERTIES

- Improved compressive strength
- Excellent cold flow behaviour
- Increased rigidity
- Better dimensional stability than other Murylon® materials
- Can be used at higher temperatures (+120° C)
- Low moisture absorption

POSSIBILITIES OF USE

- Highly stressed load-bearing machine parts

MURYLON® 6 Cast

Murylon® 6 CAST has extremely low levels of residual stress thanks to the casting procedure used to produce it. This material is therefore ideally suited to extensively processed components.

SPECIAL PROPERTIES

- Good impact resistance
- Low cold flow characteristics
- Optimized wear properties (similar to those of Murylon® A)
- Low residual stress
- Flexible production of large-volume products possible
- Good fatigue strength

POSSIBILITIES OF USE

- Runners
- Slide elements
- Parts subject to high impacts
- Cog and chain wheels
- Pulleys

MURDOPOL®

The main advantage of this material is its fantastic ability to create firm plastic/metal connections. This is made possible by the casting procedure used in its production, which involves casting around a steel core. The plastic and metal cutting deformation provides an absolutely accurate rotation for cog wheels and rollers. Murdopol® has extremely high shock and impact resistance characteristics and good emergency running characteristics thanks to its high wear resistance.

SPECIAL PROPERTIES

- Good shock and impact resistance
- Low residual stress
- Metal core surrounded by cast plastic available
- Good damping and vibration behaviour
- Lowest moisture absorption of all polyamides
- Good resistance to chemicals
- Dimensionally stable

POSSIBILITIES OF USE

- Cog wheels with steel core
- Pulleys
- Humid usage sites
- Parts subject to high impacts
- Cam disks and sprockets

MURYTAL® C

MURYTAL® C natural [FS]®

Thanks to their extremely low absorption of moisture, Murytal® materials are ideally suited for use as electronic isolation components. A fine crystalline structure and high yield strength mean that Murytal® C has a high ability to regain its original form.

SPECIAL PROPERTIES

- High rigidity
- Excellent ability to regain its form
- Extremely good electric isolation properties
- Practically no moisture absorption
- Good resistance to chemicals (pH 4 – 13)
- Approved for use in the food industry (EU and FDA) (Natural)
- Extremely good machinability
- Hydrolysis resistant to 80° C

MURYTAL® C blue [FS]®

Provided with the same properties as Murytal® C natural, the blue plastic is ideal for use in the food sector thanks to its colour.

SPECIAL PROPERTIES

- High rigidity
- Excellent ability to regain its form
- Extremely good electric isolation properties
- Practically no moisture absorption
- Good resistance to chemicals (pH 4 – 13)
- Approved for use in the food industry (EU and FDA)
- Extremely good machinability
- Hydrolysis resistant to 80° C

POSSIBILITIES OF USE FOR ALL MURYTAL® MATERIALS

- Slide elements
- Cog wheels
- Cams
- Snap-on connections

MURYTAL® H

In addition to the excellent properties of Murytal® C, Murytal® H is stronger and more rigid with a lower expansion coefficient.

SPECIAL PROPERTIES

- Higher rigidity than Murytal® C
- Excellent ability to regain its form
- Extremely good electric isolation properties
- Practically no moisture absorption
- Good resistance to chemicals (pH 4 – 9)
- Extremely good machinability

MURYTAL® ESD

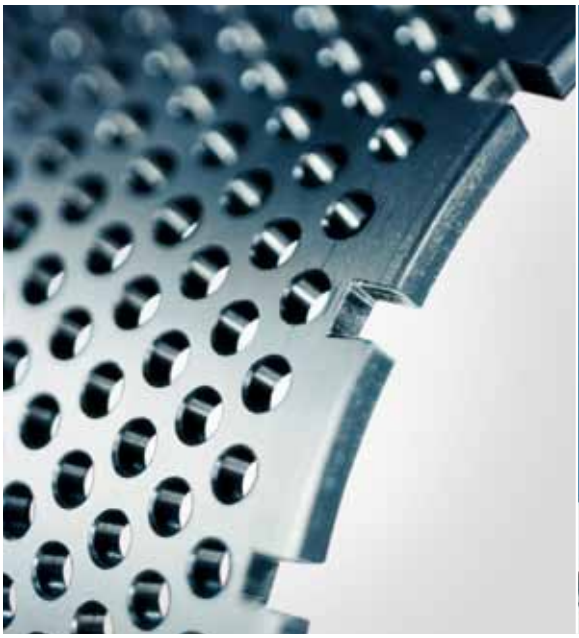
Additives make this material conductive. The mechanical properties of the material are retained almost in their entirety.

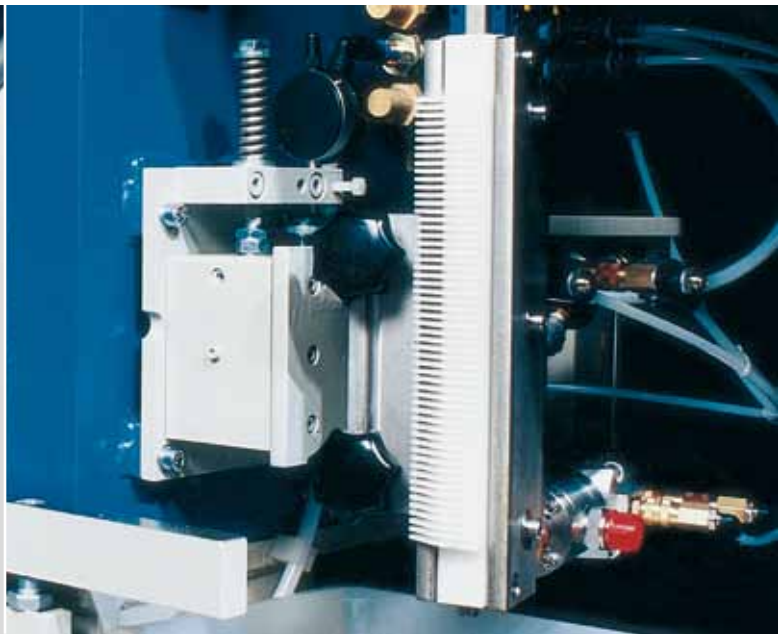
SPECIAL PROPERTIES

- Suitable for devices and machines subject to Directive 94/9/EC (ATEX 95)

POSSIBILITIES OF USE FOR ALL MURYTAL® MATERIALS

- Slide elements
- Cog wheels
- Cams
- Snap-on connections





MURYLAT®
MURYLAT® [FS]®

Thanks to its extremely low absorption of moisture and low expansion coefficient, Murylat® is ideally suited for the processing of precision parts. Murylat® has an extremely high hardness grade and can withstand extreme static stresses exceptionally well.

SPECIAL PROPERTIES

- High creep strength – even at high temperatures
- Very good dimensional stability
- Low moisture absorption
- Approved for use in the food industry (EU and FDA) (Natural)
- Extremely good electric isolation properties

MURYLAT® SP
MURYLAT® SP [FS]®

Murylat® SP combines the properties of Murylat® with improved wear and friction characteristics. It also has increased dynamic resilience which, for example, significantly reduces the required drive power for your plants. This is made possible by the homogeneous distribution of solid lubricant.

SPECIAL PROPERTIES

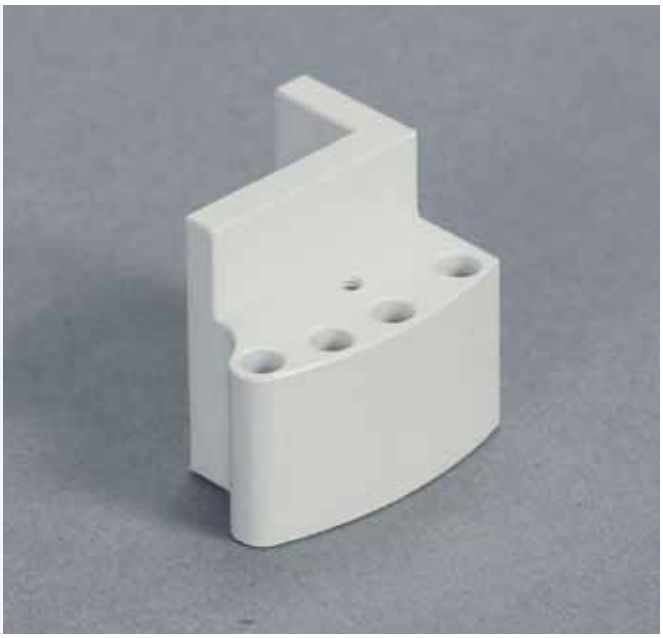
- Increased wear resistance
- Better slide properties
- High creep strength – even at high temperatures
- Very good dimensional stability
- High dynamic load-bearing capacity
- Low moisture absorption
- Approved for use in the food industry (EU and FDA)

POSSIBILITIES OF USE FOR MURYLAT®

- Machine parts with narrow tolerances
- Bearing and transmission elements
- Highly stressed chain guide rails
- Chain wheels

POSSIBILITIES OF USE FOR MURYLAT® SP

- Wear-resistant, highly stressed slide elements with narrow tolerances
- Bushes/sliding bearings
- Guides



MURYLON® HT

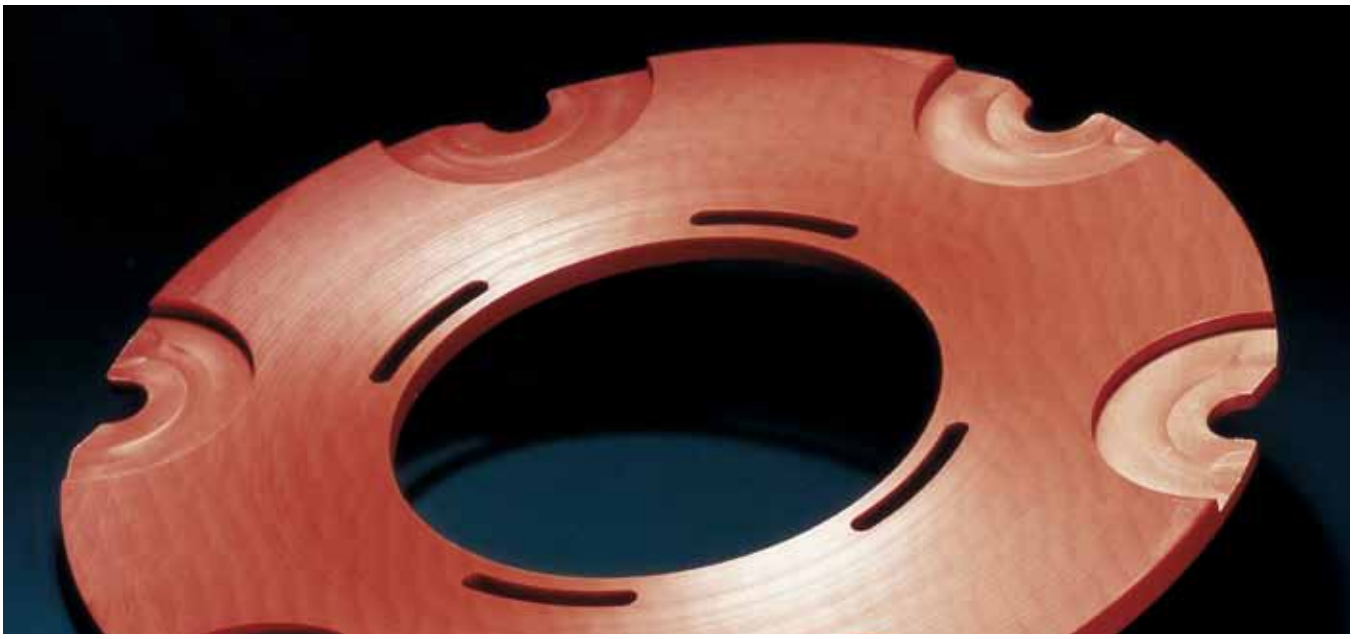
The use of this highly temperature-resistant polyamide enables reliable operation up to a constant service temperature of +155° C. The material retains its rigidity and creep strength over the entire temperature range far better than other Murylon® types. Thanks to its increased resistance against oxidative degradation, it is usually used in applications at above +80° C.

SPECIAL PROPERTIES

- Highly wear-resistant and good slide properties, especially at high temperatures
- Good resistance to thermal aging
- High creep resistance

POSSIBILITIES OF USE

- Sliding bearings
- Chain guide rails and guides for use at high temperatures



MURINYL®
MURINYL® [FS]®

This material is ideally suited for use in the food sector and medical industry. As a fluorinated plastic, Murinyl® is exceptionally resistant to chemicals, hydrolysis, and sterilization. Moreover, the properties of the material change very little even at high service temperatures and after long-term exposure to UV radiation, meaning that Murinyl® is ideally suited for a wealth of applications both inside and outside.

SPECIAL PROPERTIES

- Good wear resistance
- Good rigidity
- Higher compressive strength than Murflor®
- High constant service temperature
- Good resistance to chemicals
- Resistant to sterilization
- No stress corrosion possible
- Very good resistance to UV rays and adverse weather conditions
- No moisture absorption
- Approved for use in the food industry (EU and FDA)

POSSIBILITIES OF USE

- Construction of chemical apparatus
- Valve and pump parts
- Pharmaceutical and food sectors

MURFLOR®
MURFLOR® [FS]®

Murflor® materials are ideally suited to use in applications that require an excellent resistance to chemicals and heating steam. Murflor®'s working range starts at -200° C and can extend to +260° C with no mechanical load. Murflor® also has the lowest dynamic friction coefficient of all thermoplastics.

SPECIAL PROPERTIES

- Best dynamic friction properties of all thermoplastics
- No stick/slip effect
- Very good anti-adhesion properties
- Electrically isolating
- Very high resistance to chemicals
- Very high resistance to hydrolysis
- Very tough, even at low temperatures
- Approved for use in the food industry (FDA)

POSSIBILITIES OF USE

- Construction of chemical apparatus
- Sliding guides and seals for use at high temperatures
- Slide bearings

MURFLOR® + Carbon

The integration of 25 % carbon increases the wear resistance, hardness, and creep strength of this material. Murflor® + Carbon is used, for example, when electrical conductivity is required and Material "S"® Black Antistatic cannot be used because the ambient temperature is too high.

SPECIAL PROPERTIES

- Higher wear resistance than Murflor®
- Very good slide properties
- Low stick/slip effect
- Electrically conductive
- Suitable for devices and machines subject to Directive 94/9/EC (ATEX 95)

POSSIBILITIES OF USE

- Sliding guides and slide bearings

MURFLOR® + Bronze

The addition of 60 % bronze to the base material reduces the expansion coefficient and gives lower sliding wear.

SPECIAL PROPERTIES

- Lower sliding wear than Murflor®
- Good slide properties
- Low stick/slip effect
- Higher compressive strength than Murflor®

POSSIBILITIES OF USE

- Sliding guides and slide bearings

MURFLOR® + Glass

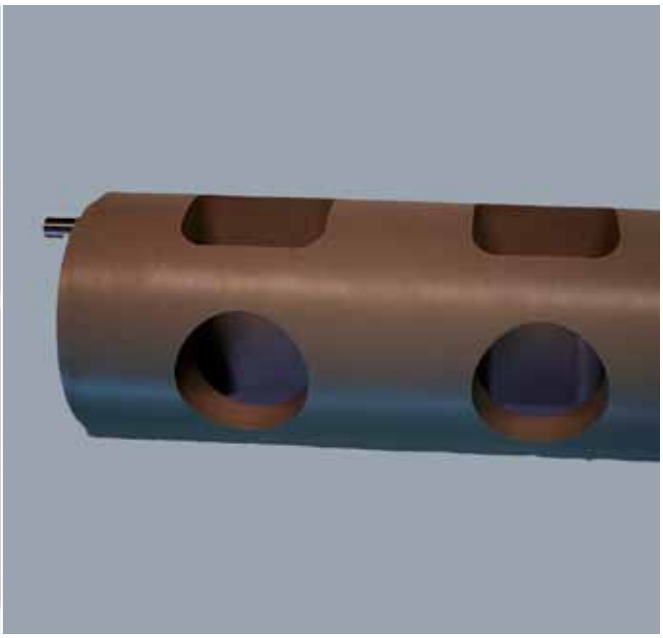
The use of 25% glass fibres in the Murflor® base material improves its mechanical properties. The increased compressive strength and improved rigidity allow applications that are subject to heightened stress.

SPECIAL PROPERTIES

- Higher burst strength than Murflor®
- Higher rigidity than Murflor®
- Reduced cold flow behaviour
- Extremely good wear resistance

POSSIBILITIES OF USE

- Slide bars and plates
- Gaskets



MURINIT® SP
MURINIT® SP [FS]®

Thanks to the low fibre content and integrated solid lubricant, this high-performance material offers an excellent combination of good slide and wear behaviour, high strength, and dimensional stability – even at high temperatures. Murinit® SP also has a good resistance to chemicals and hydrolysis.

SPECIAL PROPERTIES

- High wear resistance
- Good slide properties
- Good resistance to chemicals and hydrolysis
- Excellent creep and compressive strength
- Good electrical isolation properties
- Low thermal expansion coefficient
- Approved for use in the food industry (EU and/or FDA)

POSSIBILITIES OF USE

- Wear parts subject to temperature stress
- Slide elements

MURPEC®
MURPEC® [FS]®

In comparison with other thermoplastics, Murpec® has an exceptionally low thermal expansion coefficient. This property provides optimum dimensional stability and means that dimensions do not change even if used in wet environments. Because of the high glass transition temperature, the material's rigidity and strength are retained almost in their entirety even at high temperatures. Murpec® materials are extremely resistant to deformation and exceptionally abrasion-proof.

SPECIAL PROPERTIES

- High wear resistance
- Low expansion coefficient
- Electrically isolating
- High temperature resistance
- Flame-resistant
- High compressive strength
- High resistance to energy radiation
- Excellent resistance to chemicals and heating steam
- Approved for use in the food industry (EU and/or FDA)

POSSIBILITIES OF USE

- Sliding guides
- Cog wheels
- Parts subject to temperature stress

MURPEC® SP

Modified Murpec® SP provides excellent slide properties in addition to good mechanical properties. This material variant also offers improved wear behaviour due to its special additives.

SPECIAL PROPERTIES

- Better slide properties
- Increased wear resistance
- Very low expansion coefficient
- High temperature resistance
- Flame-resistant
- High compressive strength
- High resistance to energy radiation
- Excellent resistance to chemicals and heating steam

POSSIBILITIES OF USE MURPEC® SP

- Highly-stressed wear parts
- Sliding guides
- Slide bearings