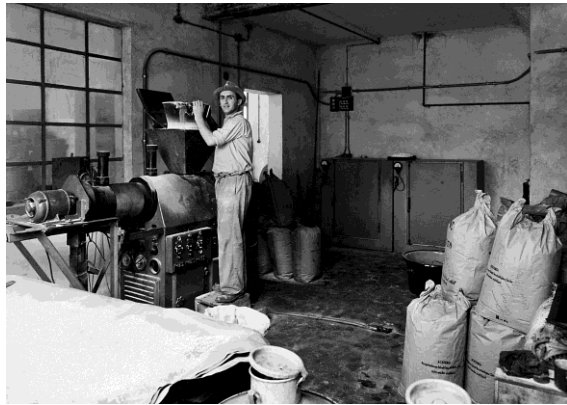




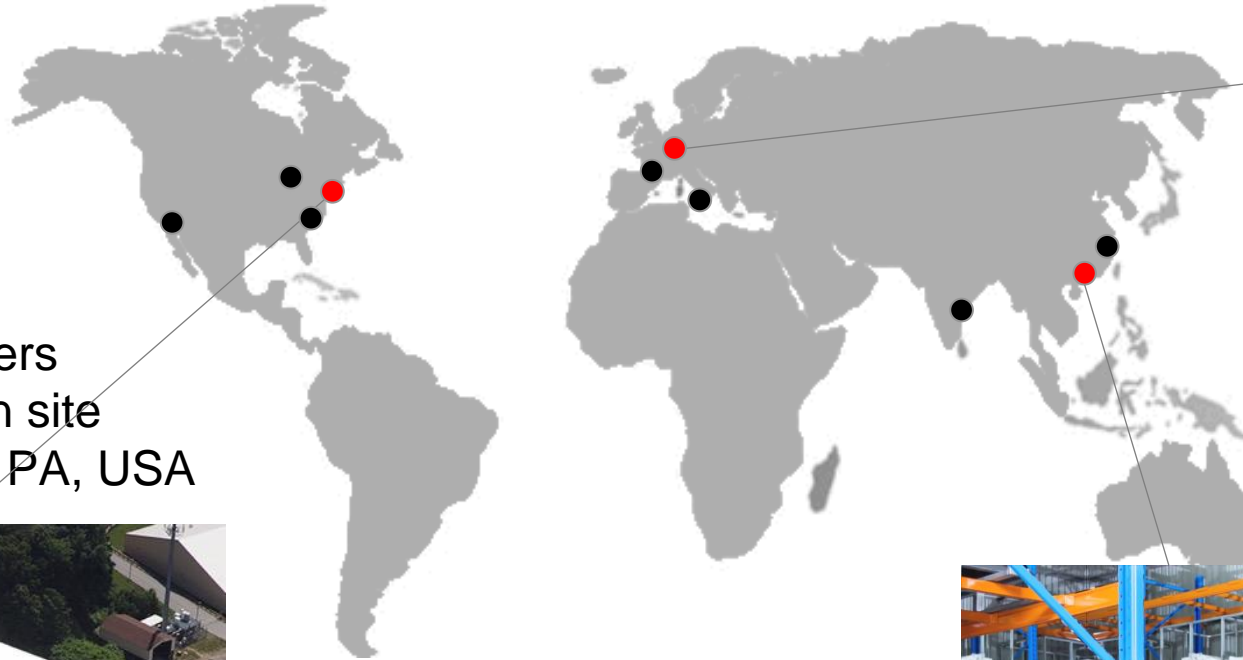
HIGH PERFORMANCE MATERIALS NEW DEVELOPMENTS

PLASTICS
ENGINEERED BY **GEHR** 

» FAMILY OWNED AND OPERATED COMPANY WITH TRADITION



» GEHR – AN INTERNATIONAL COMPANY



» US headquarters and production site
Philadelphia, PA, USA



» World headquarters and production site
Mannheim, Germany



» Asia headquarters and warehouse
Hong Kong

» QUALITY AND INNOVATION



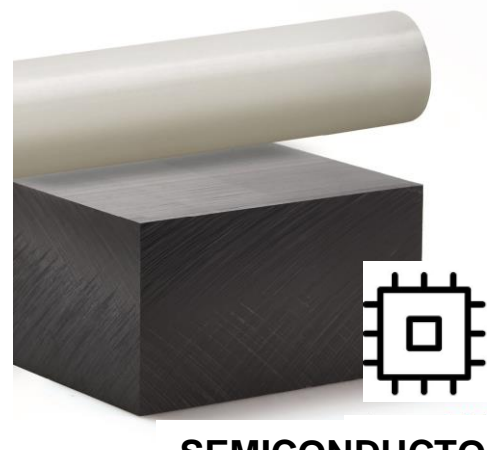
» MARKET SEGMENTS



STOCK SHAPES



MEDIGEHR®



SEMICONDUCTOR



FIL-A-GEHR®



WRITING INSTRUMENTS



COSMETICS



MULTI-LAYER TUBES

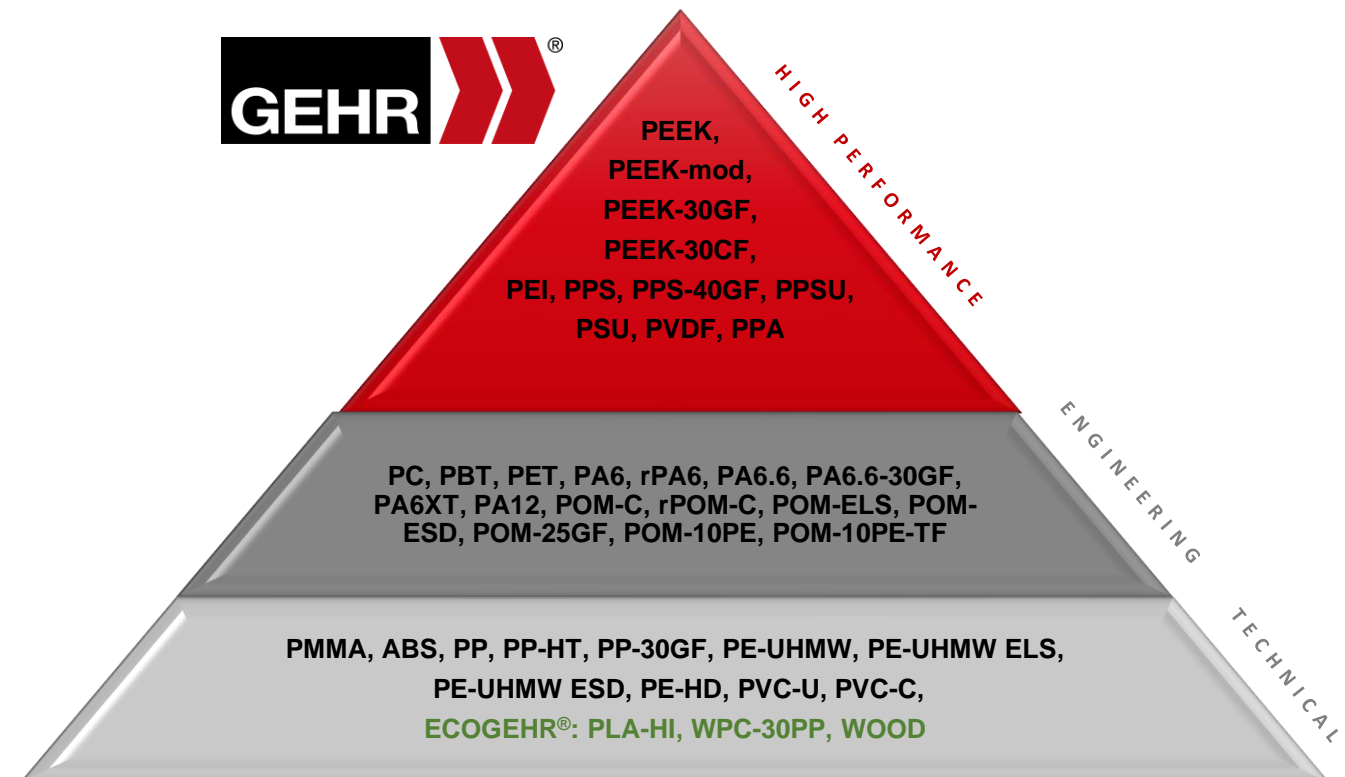
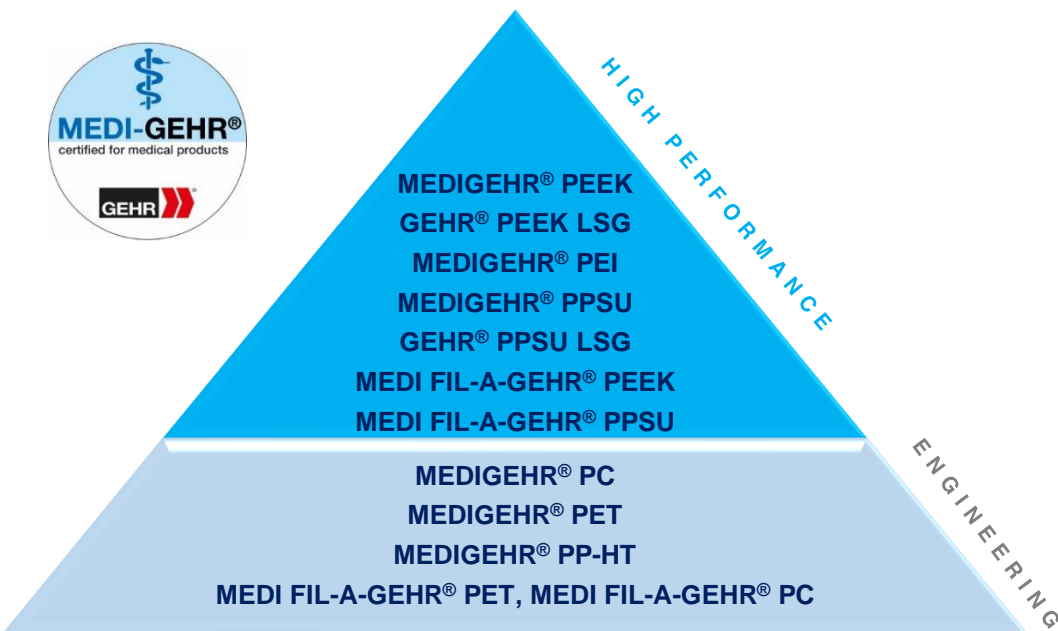


CUSTOMIZING

» GEHR EXPERTISE

**EXTRUDED RODS, SHEETS, TUBES,
PROFILES AND FILAMENTS**

- » Rods up to 700 mm diameter
- » Thick plates up to 300 mm thickness
- » Calendered sheets from 1 mm
- » Decorative precision tubes
- » Semi-finished products for medical applications
- » Filaments for professional 3D printing



ENVIRONMENTAL PROTECTION AND SUSTAINABILITY

CO₂-NEUTRAL PRODUCTION

- Conversion to green electricity and green gas in Mannheim and Philadelphia.
- Achievement of the implementation packages of Katowice Scope1 and Katowice Scope1 and 2

SINCE 2016: 100% RENEWABLE ELECTRICITY

Since 2016, total electricity requirements covered by renewable energies - mainly from hydropower in Norway.

COOLING PROCESS OPTIMIZED

In order to sustainably conserve water as a resource, we have also made mechanical adjustments to our plants. This has enabled us to significantly reduce the amount of water required in the cooling system as well as the supply of fresh water.

RECYCLING CONCEPT FOR THE AVOIDANCE OF PRODUCTION WASTE

The returned material is sorted, ground, recycled and reused in production wherever possible and permitted.



» SUSTAINABILITY REPORT 2022

CERTIFICATIONS

- » ISO 9001, ISO 13485, ISO 14001, ISO 50001, ISO 45001
- » ISCC Plus
- » ECOVADIS Rating 2022: Silver



CORPORATE PHILOSOPHY

- » Long-term independence
- » Extensive sustainable portfolio
- » Quality leadership
- » Innovation
- » Corporate social responsibility in terms of sustainable management, CSR responsibility

REDUCTION OF ENERGY CONSUMPTION

Since 2013 10% reduction of energy per kg extruded material thru:

- » new efficient extruder
- » optimized annealing process
- » new compressed air machine,
- » energetic refurbishment of buildings
- » new photovoltaic system to be installed in 2023 that will cover approx. 15% of demand

SOCIAL RESPONSIBILITY

- » Below industry average for „1000-man quota“ (accident rate per 1000 full-time workers)
- » Cooperation with the University of Mannheim
- » Flexible working hours / mobile working stations
- » Sponsoring local sport events / teams

RECYCLING

- » Recycling rate increased to 7,8%
- » Reduced scrap rate by 2%
- » Strategic partnership with plastic recovery company

LIFECYCLE ASSESSMENT

- » Status Quo carbon footprint analysis based on GHG protocol
- » Currently emissions are 2145t CO₂ eq.

GREENHOUSE GAS EMISSIONS

- » Scope 1: 5% Scope 2: 0% Scope 3: 95%
- » Reduction of 11% in 2022 (compared to 2021)

ACCOMPLISHED ACTIONS

- » **ECOGEHR®** & **ECO FIL-A-GEHR®**
- » Since 2016: green electricity
- » Since 2020: green gas
- » ECOVADIS Rating 2022: Silver
- » ISCC+ biocircular PP for writing instruments
- » Member of Mannheim climate protection alliance

CORPORATE GOVERNANCE

- » Corporate Environment, culture, leadership
- » Dealing with business partners, customers, suppliers
- » Supply chains
- » Anti Trust, compliance, confidentiality
- » Whistleblowing

» MOBILITY OF THE FUTURE

TUM HYPERLOOP

In collaboration with TU Munich and Evonik, we are ensuring that the Hyperloop project moves into the next phase. Hyperloop is a new concept for transporting goods and people at almost the speed of sound. The train travels like a maglev train in a low-pressure tube above the earth's surface. In this team, we produced sheets made of VESTAMID[®] (PA12 filled with glass fibers + special additive) for a 24-m-long test track. After extrusion, these sheets are machined before installation to hold the magnetic coils in position for the train.



PLASTICS ENGINEERED BY
GEHR 

EVONIK
Leading Beyond Chemistry



STOCK SHAPE – NEW IN STOCK

» GEHR® PE UHMW ELS

- » electrically conductive (ELS)
- » reduced surface and volume resistance
- » Colour: black
- » Rods in Ø 30, 40, 50, 60, 70 mm

» GEHR® PE UHMW ESD

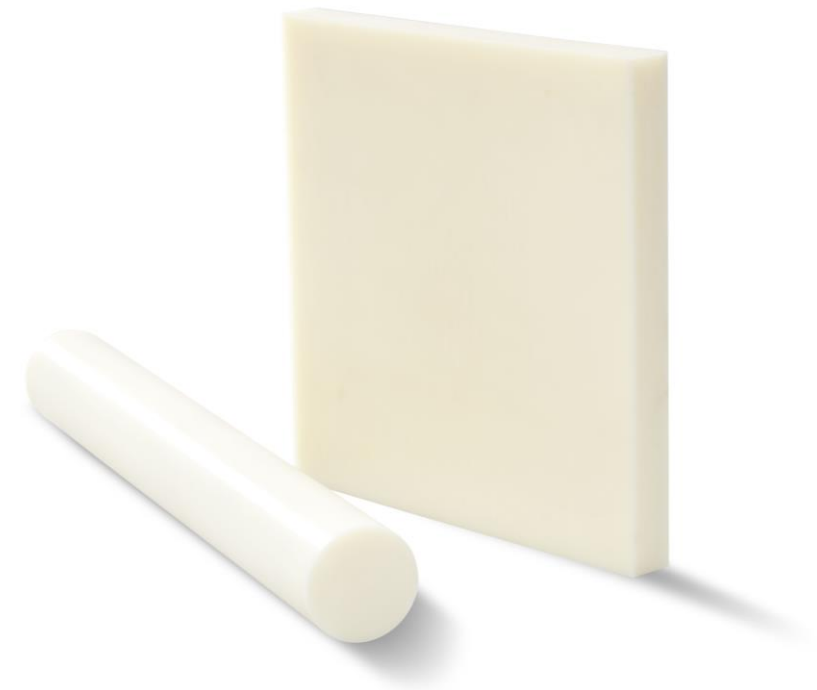
- » anti static (ESD)
- » reduced surface and volume resistance
- » Colour: black
- » Rods in Ø 30, 40, 50, 60, 70 mm

» GEHR® PEEK

- » Colour: black
- » Sheets 20, 25, 30, 35, 40 mm

» GEHR® PPA

- » Colour: natural
- » Rods (20-100mm) and sheets (10-90mm) on request
- » Alternative for PA4.6





NEW PRODUCT

STOCK SHAPE – **COMING SOON**

» GEHR® PPS

- » Colour: natural
- » Rods: 10-100mm
- » Sheets: In progress
- » Application: Semicon industry

» GEHR® PPS-40GF

- » Colour: dark grey
- » Rods: 12-60mm
- » Sheets: In progress
- » Application: Oil and gas industry

» GEHR® PVDF cal. 2F

- » Colour: natural
- » Sheets: 2-8 mm
- » Foiled on both sides
- » Application: Semicon industry

» GEHR® PVDF

- » PFOA and PFOS free materials
- » Rods, sheets and cal. Sheets
- » Application: Chemical industry, semicon industry

COMING SOON



SUSTAINABLE PRODUCTS

» ECO FIL-A-GEHR® Wood

ECO FIL-A-GEHR® Wood consists of recycled wood fibers mixed with a biopolymer. The raw material is made by Sulapac®. The printed material is haptic, visual and odor like wood. Nevertheless, it can be used to print extremely robust / stable parts.

- » 1,75 and 2,85mm
- » 1kg spool
- » You can find all our FIL-A-GEHR® products at:

www.filagehr.com

APPLICATION:

Cosmetic jar, decorative components, sustainable Displays

» ECOGEHR® POM-C R

- » **ECOGEHR® POM-C R** is made from 100% recycled POM-C.
- » The remaining properties can be considered as equivalent to virgin POM-C

PRODUCT RANGE:

- » Colours: black
- » Rods: 25mm – other sizes on demand (10-80mm)
- » Sheets: 30mm – other sizes on demand (20-50mm)



Das Kunststoff-Zentrum

SKZ

Carbon Footprint

This document confirms that on behalf of



GEHR Kunststoffwerk GmbH & Co. KG
Casterfeldstr. 172
68219 Mannheim

the Carbon Footprint¹ (CF) has been determined for the following products

Full rods from recycle from 100 % recycled POM	Full rods from virgin material from 100 % virgin POM
1,29 kg CO ₂ -eq.	4,61 kg CO ₂ -eq.

relating to 1 kg of the respective product.

Using 1 kg *Full rods from recycled POM* instead of 1 kg similar virgin *Full rods* reduces greenhouse gas emissions by about 3,33 kg CO₂-eq.

Würzburg, 11.10.2022

Antonia Ivanda
Antonia Ivanda M.Sc.
SKZ – Das Kunststoff-Zentrum

¹The Carbon Footprint was calculated using established, science-based methods. The calculation was conducted based on the international LCA standards DIN EN ISO 14040, DIN EN ISO 14044 and the standard DIN EN ISO 14067 "Carbon footprint of products". The comparison is subject to limitations.



AEROSPACE & DEFENCE INDUSTRY

» ULTEM™ 9085 FILAMENT (PEI)

ULTEM™ 9085 FILAMENT (PEI) is a high-performance filament based on the well-known raw material ULTEM™ 9085.

- » Resistant to high-energy radiation
- » Inherently flame retardant (UL94-V0)
- » Print nozzle temperature 360°C;
- » Pressure chamber temperature 90°C; Pressure plate temperature 160°C
- » Aerospace FAR25.853 and OSU55/55
- » Rail EN45545 R6-HL3

APPLICATIONS:

- » Rail, Aerospace, Automotive

PRODUCT RANGE:

- » Colour: Natural and black
- » Diameter: 1,75 mm
- » 1 kg Spools

» GEHR® PA6 FR

PRODUCT RANGE:

- » Colours: Natural and black
- » Rods (6-200mm) and sheets (10-100mm) on request

APPROVALS OF THE RAW MATERIAL:

- » Aerospace FAR 25.853
- » Railway EN45545-2:2013+A1:2015





MEDICAL TECHNOLOGY

» PROTECT GEHR®

» The aim was to develop an inorganic antibiotic metal in order to then use it in semi-finished products. These semi-finished products can then be processed into dental products.

- » Patented solution
- » Can be added to all our products (rods, sheets, filaments, etc.)
- » Designation of these new product range is:

PROTECT GEHR® **PROTECT FIL-A-GEHR®**

These products are in the pre-launch phase. Tests/approvals on semi-finished products upon first delivery.

» MEDIGEHR® PET MG

- » Colours: white and transparent
- » Rods: Ø56mm – other sizes on demand (10-100mm)
- » Sheets: 20mm – other sizes on demand (15-50mm)

» MEDIGEHR® PEI MG

- » Colours: natural
- » Rods: 10-100mm on demand



» GEHR® PPSU and PEEK LSG COLORED

» Your benefit: All dimensions are made-to-order; customization with fast delivery and minimum order quantity of 25 kg

» Available colors:

red (~RAL 3001)

blue (~RAL 5005)

yellow (~RAL 1006)

green (~RAL 3262)

purple (~RAL 7668 C)

» More colors are available on request

» Material: Solvay Radel® PPSU and Solvay Ketaspire® PEEK

» Diameter Ranging: 10 to 100mm

APPLICATIONS:

» Instrument handles

» Sizers and spacers

» Surgical instruments





» **MEDI FIL-A-GEHR®**

MEDI FIL-A-GEHR® products are suitable for medical and pharmaceutical applications with direct body contact with tissue, bone, skin and mucosa for up to 24 hours. All materials meet the same requirements as the semi-finished products. Especially for our certificates and approvals:

FDA*, **EU 10/2011***, **ISO 10993-1, -5, -12, -18** and **USP Class VI**

* only for raw material

MATERIALS:

- » **MEDI FIL-A-GEHR®** PET MG (white and transparent)*
- » **MEDI FIL-A-GEHR®** PC MG
- » **MEDI FIL-A-GEHR®** PPSU MG
- » **MEDI FIL-A-GEHR®** PEEK MG



MEDI FIL-A-GEHR® PPSU MG
Arthroscope prototype



MEDI FIL-A-GEHR® PEEK MG
Instrument holder prototype

FURTHER INFORMATION



DELIVERY PROGRAM



MEDI-GEHR



FIL-A-GEHR



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