# +++Condition Monitoring+++

#### Tags

#Hall14 #Hall9 #Pavilion #AftermarketSalesServices

#### Description

#### Key Features

#### Advantages

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Fun Fact / Goodie

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Predictive Maintenance+++

#### Tags

#Hall14 #Hall9 #Pavilion #AftermarketSalesServices

#### Description

#### Key Features

#### Advantages

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Fun Fact / Goodie

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Remote Service+++

#### Tags

#Hall14 #Hall9 #Pavilion #AftermarketSalesServices

#### Description

#### Key Features

#### Advantages

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Fun Fact / Goodie

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# Modernization

#### Tags

#Hall14 #Hall9 #Pavilion #AftermarketSalesServices

#### Description

Service means more to us than someone stopping by to repair equipment. Our service structure offers much more than that. It consists of more than 350 service engineers and technicians around the globe who not only look after your machines and systems but also after your business. They see themselves as partners who secure your future.

#### Modernization Services

* **Service hotline 24/7 available** worldwide
* **29 Service centers** worldwide
* **350 Service engineers** and technicians worldwide

#### Range of Services

Nothing is more important in modern processing machinery and plant design than safety and the power of innovation – these form the basis for confidence. Technically complex products such as compounding or materials handling systems should consequently only be serviced by skilled personnel – i.e. by specialists like us. We understand service as more than just maintenance and repair. Rather, we dedicate ourselves daily to demonstrating our reliability, efficiency and expertise to give our customers a competitive edge in difficult markets.

#### Service Offerings

* Emergency Service
* Spare Parts
* Maintenance & Repair
* Modernization
* Field Service, start-up and commisioning
* Service Consulting
* Service Agreements
* Training
* Our test labs around the world

#### Related Topics

* Emergency support services for industrial equipment​
* Spare parts management and logistics​
* Preventive maintenance strategies for machinery​
* Modernization and upgrading of existing equipment​
* Consulting services for process optimization​
* Customized service agreements for operational efficiency​
* On-site field services and start-up assistance​
* Training programs for equipment operation and maintenance​
* Utilization of global test centers for process validation​
* Digital platforms for spare parts and service management

#### Related Talks & Events

None

#### Keywords

* Emergency Service​
* Spare Parts​
* Maintenance & Repair​
* Modernization​
* Service Consulting​
* Service Agreements​
* Field Service​
* Start-up Assistance​
* Site Management​
* Training Courses​
* Test Centers​
* MyCoperion​
* Process Optimization​
* Equipment Upgrades​
* Preventive Maintenance​
* Operational Efficiency​
* Digital Service Platforms​
* Global Service Network​
* Customer Support​
* Technical Training

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# Modernization

#### Tags

#Hall14 #Hall9 #Pavilion #AftermarketSalesServices

#### Description

Modernization of extruders, compounders, feeders, bulk materials plants and components The objectives of our modernization services are to achieve maximum productivity in conjunction with maximum availability and operational reliability of your facilities.

We therefore offer versatile services in the area of modernization. The emphasis is never on what is possible but on what is pragmatic.

#### Modernization Services

* **Compounding & Extrusion**
* **Feeding and Pneumatic Conveying**
* **Material Handling**

#### Emergency hotline - Extrusion, Compounding, Material Handling

* Europe / Asia: +49 711 897 2121
* Americas: +1 888 267 3746

#### Emergency hotline - Feeding, Conveying

* EMEA / Asia:+41 62 892 06 66
* Americas:+1 856 589 9083

#### Related Topics

* Extruder and compounder performance optimization​
* Feeding and pneumatic conveying system upgrades​
* Material handling system enhancements​
* Control system modernization​
* Energy efficiency improvements in industrial equipment​
* Preventive maintenance strategies​
* Operational reliability and uptime maximization​
* Integration of advanced technologies in existing systems​
* Service consulting for equipment lifecycle management​

#### Related Talks & Events

None

#### Keywords

* Drive unit upgrades​
* Process section enhancements​
* Discharge system improvements​
* SmartConnex feeder controls​
* K-SFT weighing technology​
* Silo washing systems​
* Pipe pigging for dry cleaning​
* Control system retrofitting​
* Energy savings initiatives​
* Downtime reduction techniques​
* Equipment lifespan extension​
* Product quality enhancement​
* Obsolescence management​
* Field service support​
* Operator training programs​
* Process automation integration​
* Safety standard compliance​
* Customized modernization solutions​
* Performance monitoring tools​
* Lifecycle cost analysis

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# Spare Parts

#### Tags

#Hall14 #Hall9 #Pavilion #AftermarketSalesServices

#### Description

Coperion and Coperion K-Tron offer a comprehensive and efficient spare parts service for the delivered machines and systems. The Coperion spare parts store is one of the largest in the industry with more than 48,000 parts in the data base. These include both original Coperion spare parts and parts from other suppliers.

#### Coperion Spare Parts

##### Need to Know

* We support short delivery times and 24-hour express delivery for parts on stock.
* Emergency stock available for the fast replacement of key components
* Supply of alternative types for parts which are no longer available
* Replacement gearbox and barrel service for minimization of downtime and reduction of the maintenance resources by scheduled repairs

##### Spare Parts Contacts

* Europe / Asia: +49 (0) 711 897 2574
* NAFTA: +1 (0) 888 267 3746

#### Coperion K-Tron Spare Parts

##### Ordering Spare Parts

* **Order Spare Parts for Feeding Equipment:** To get the spare parts required, fill in and submit the form supplied. View the checklist below to ensure you have all the information at hand to fill in the form.
* **Order Spare Parts for Conveying Equipment:** To get the spare parts required, fill in and submit the form supplied. View the checklist below to ensure you have all the information at hand to fill in the form.
* **Service Request for ProRate PLUS Feeders:** To get the spare parts required, fill in and submit the form supplied. View the checklist below to ensure you have all the information at hand to fill in the form.

##### Need to Know

The Coperion K-Tron project or commission number is the surest way to determine what equipment you have.

* The Coperion K-Tron Project/Commission # is on every Coperion K-Tron feeder and control panel and also on the spine of your Coperion K-Tron manual.
* Your Project/Commission # will tell your service technician if the equipment is under warranty.

If you don’t have your project/commission number, your Coperion K-Tron Service Technician needs to know your specific equipment.

* The exact type of feeder (including agitation) for each feeder involved. The Coperion K-Tron control unit in use with your feeder. This is the specific Coperion K-Tron interface, not the type of PLC or host computer you are using.

##### Spare Parts Contacts

* Americas: +1 856 256 3203
* EMEA: +41 62 885 73 32
* China: +86 21 6767 9505
* Asia (Singapore): +65 6418 8255

#### Related Topics

* Spare parts management for feeding and conveying equipment
* ​Ordering processes for Coperion K-Tron spare parts​
* Importance of project/commission numbers in equipment servicing​
* Contact points for spare parts inquiries across regions​
* Emergency support services for equipment maintenance

#### Related Talks & Events

None

#### Keywords

* Coperion K-Tron spare parts​
* Feeding equipment components​
* Conveying equipment spares​
* Project/commission number identification​
* Spare parts order forms​
* Regional spare parts contacts​
* Emergency hotline support​
* Equipment warranty verification​
* Service request procedures​
* Equipment maintenance support

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[Spare-Parts.jpg]] Brochure: [[Spare-Parts.pdf]]

# Start-Up and Comissioning

#### Tags

#Hall14 #Hall9 #Pavilion #AftermarketSalesServices

#### Description

Our field service encompasses a broad scope of services on-site – from repair of a small systems to the start-up of a ZSK 420 twin screw extruder, from pet food to polypropylene.

#### Services

* Supervision and management of construction / installation works
* Start-up supervision / assistance
* Performance tests
* Database supported material management (warehousing)
* Full size site management for EPC projects
* OPI – Open Package Inspections
* Optimization of systems

##### Emergency hotline - Extrusion, Compounding, Material Handling

* Europe / Asia: +49 711 897 2121
* Americas: +1 888 267 3746

##### Emergency hotline - Feeding, Conveying

* EMEA / Asia: +41 62 892 06 66
* Americas: +1 856 589 9083

#### Related Topics

* On-site equipment repair services​
* Supervision of construction and installation works​
* Start-up assistance for industrial machinery​
* Performance testing of equipment​
* Material management during site operations​
* Site management for EPC projects​
* Open Package Inspections (OPI)​
* System optimization services​
* Emergency support for extrusion and material handling equipment​
* Emergency support for feeding and conveying systems

#### Related Talks & Events

None

#### Keywords

* Field service​
* Start-up supervision​
* Site management​
* Performance tests​
* Material management​
* EPC project management​
* Open Package Inspection​
* System optimization​
* Emergency hotline​
* Extrusion equipment support​
* Material handling support​
* Feeding system support​
* Conveying system support​
* Construction supervision​
* Installation supervision​
* Start-up assistance​
* Repair services​
* On-site engineering​
* Commissioning services​
* Process control integration

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# Battery Separator Film

#### Tags

#Hall14 #Plastics #Applications

#### Description

Coperion has vast experience and has handled many projects, from R&D lab scale up to complete production lines, for all major battery components, i.e. compounding of cathode and anode materials, separators for lead-acid batteries and lately an increasing number of separators for Li-ion batteries.

The separator is a key component of every Li-ion battery, which is located between the anode and cathode and separates those two electrodes from each other to prevent internal short circuits, which at worst can lead to a fire or even an explosion. Hence, the separator plays an important role, when it comes to battery safety and reliability. Most battery separators are currently made out of polyolefins, where Coperion’s twin screw extruder systems have gained years of experience. Due to comprehensive engineering know-how, customized screw design and high process reliability Coperion systems ensure excellent quality of the final product.

#### Areas of Applications

* Automotive (electric vehicles)
* Consumer electronics: Laptop computers / mobile phones / tablet PCs / cameras
* Large scale stationary power devices
* High power applications, tools, etc.

#### Key Benefits

* Comprehensive engineering and process know-how in the production of battery components
* High-end twin-screw extruders
* Best in class reliability
* Various formulations tested in our lab tests
* High mixing performance, homogeneity
* Highest throughput rates with high quality levels ensures optimum product quality
* Maximum economic efficiency
* Versatility

#### Product Range

* **Compounding Machines and Extruders:** With its specific torque of 18 Nm/cm3, the ZSK Mc18 twin screw extruder impresses with its extremely high throughput rates, optimum product quality and maximum economic efficiency and the the ideal solutions for the production of battery separator films.
* **ZSK Mc18 Twin Screw Extruder**
* **High-accuracy Feeding Solutions:** Coperion K-Tron feeders are characterized by their high accuracy and reliability. With extensive expertise and a wide range of feeding solutions, Coperion K-Tron offers the right feeder for every application.
* With precise control and information about the bulk solids being fed, you benefit not only from adherence to the exact recipe, but also from reduced maintenance and less downtime. The result is a stable process with reduced costs.
* **Feeding Solutions**
* **Service:** With our comprehensive range of services Coperion and Coperion K-Tron are able to ensure maximum productivity and operational reliability of your compounding lines.
* **Comprehensive range of services**

#### Related Topics

* Battery separator film production​
* Extrusion processes for separator films​
* Material handling in battery component manufacturing​
* Quality control in separator film production

#### Related Talks & Events

No Talks

#### Keywords

* Battery separator films​
* ZSK twin screw extruder​
* Coperion K-Tron feeders​
* Gravimetric feeding systems​
* Polyolefin processing​
* Microporous film extrusion​
* Film stretching techniques​
* Material homogenization​
* Process automation​
* Quality assurance in film manufacturing

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[Battery-Separator-Film.jpg]] Brochure: Dateipfad

# Bioplastics

#### Tags

#Hall14 #Plastics #Applications

#### Description

Bioplastics are biodegradable, bio-based, or both. They represent a market-ready solution and are already in use in a variety of applications.

Bioplastics manufacturing places very high demands upon the compounding process due to the number of possible base polymers and the vast differences in recipe mixtures. Every process step in the compounding systems must be precisely aligned with the mechanical properties required in  the end product.

Coperion and Coperion K-Tron have decades of experience in realizing systems for bioplastics manufacturing. We possess unique process expertise and comprehensive system know-how for the entire process chain – from raw material conveying to premixing, feeding, extrusion, pelletizing and drying, as well as the gentle conveying of biocompounds. As a result, you profit from our in-depth knowledge, acquired in the fields of plastics compounding and cooking extrusion.

#### Areas of Applications

* Starch-based bioplastics
* Thermoplastic starch (TPS)
* Compounds made of various biopolymers such as PLA, PVOH, PBS, PBAT, PHA, PCL, CA
* Biopolymer filling with up to 80% filler (e.g. CaCO3, talc)
* Masterbatch for bioplastics

#### Process

**Filling and Mixing of Biopolymers** When filling and mixing biopolymers, we achieve throughputs with our systems that are comparable to those of fossil-based engineering plastics. A wide range of feeding technologies allows us to provide an optimized feeding system for any bulk material. Using patented FET technology, the extruder’s intake section is equipped with a porous, gas-permeable wall to which a vacuum is externally applied. The resulting gas vacuum markedly increases the material intake capacity and throughput when processing feed-limited products. Due to the intensive mixing and devolatilization in the extruder, very high product quality is achieved.

**Thermoplastic Starch Manufacturing Using Cooking Extrusion (TPS)** Since native starch cannot be melted using heat, it must be converted into thermoplastic starch (TPS). In this process, the starch powder (i.e. from corn, potatoes, or tapioca) is gelatinized (cooked) in the extruder. While adding liquid, heat and shearing energy, the starch’s partially crystalline structure is transformed into a completely amorphous structure. This process is irreversible. To give the TPS more flexibility, plasticizers, such as glycerin, can be added to the process. Gravimetric liquid feeders ensure that additives are added with very high accuracy, even at low feed rates.

**Starch Blend Compounding** Starch blends are mixtures of thermoplastic starch (TPS) and plastics made from fossil-based or sustainable raw materials. Manufacturing of this type of bioplastic, currently comprising the largest share of all bioplastics, can be accomplished within the twin screw extruder in a single process step. The biopolymer is fed directly into the extruder along with components for TPS. The recipes and properties of starch blends vary greatly depending upon the purpose of the end product. Using high-accuracy feeders, raw materials are introduced into the twin screw extruder. With the smart flow aid device ActiFlow, gravimetric twin screw feeders can reliably feed even difficultflowing starches with high accuracy. Within the ZSK extruder the raw materials are modified by means of intensive energy introduction and homogeneously mixed. The melt is reliably devolatilized and, depending upon product properties, can be processed into compounds using strand or underwater pelletizing.

#### Product Range

* **Compounding:** Our ZSK and STS series of twin screw extruders form the core of processing systems for bioplastics. The process section’s modular design allows us to custom-tailor the design of the extruder to each process individually. Processing in the Coperion extruder features intensive dispersion and mixing performance at very low shear stress and low  temperatures. The product is handled very gently in the process section with a short residence time, while at the same time  achieving reliably high throughputs and highest product quality. To obtain specific product properties, fibers, fillers, and  additives can be introduced downstream into the process using side feeders. Our Feed Enhancement Technology (FET) ensures  a very high intake capacity for feed-limited products with vacuum applied to the feed zone from the outside. Volatile  materials are reliably removed by degassing, devolatilization domes and the ZS-EG side devolatilization, thus achieving consistently high product quality.
* **Twin screw extruder ZSK Mc18** for high torque requirement **Twin screw extruder ZSK Mv PLUS** for high screw volume requirement **Twin screw extruder STS Mc11**
* **Feeding:** For free-flowing bulk materials, our single screw feeders and bulk solids pumps are ideal solutions. For ingredients with poor flow properties, we recommend our twin screw feeders, which can be equipped with flow aids such as ActiFlow™ technology when needed. Vibratory feeders and weigh belt feeders are well suited for flakes or fibers. For feeding liquids, we build pump systems with hanging or platform scales that can be individually designed for any viscosity. All of our loss in-weight feeders are equipped with Smart Force Transducer (SFT) weighing technology to ensure high-accuracy bulk material feeding, batching and metering. If space is limited, up to six feeders can be grouped around the process inlet using the K4G feeder line.
* **Feeders**
* **Material Handling Equipment:** We offer solutions for handling the full spectrum of bulk materials in the bioplastic manufacturing process, encompassing both individual components as well as complete conveying systems. Solutions include, for example, rotary valves for material discharge from silos, bulk bins, or small bag dump stations, as well as continuous feeding into the process. Using  continuous vacuum and pressure conveying systems specifically tailored to the material, ingredients are gently transported to the feeders and twin screw extruders. After extrusion, we take over further process steps using additional technologies,  such as cooling/warming, devolatilization, cleaning/sifting or homogenization as well as conveying of the finished product.
* **Rotary Valves** **Vacuum Receivers and Loaders** **Hoppers & Bin**
* **Service:** Coperion and Coperion K-Tron offer versatile services. Their emphasis is never on what is possible but on what is practical.
* **Comprehensive scope of services**

#### Related Topics

* Bioplastics manufacturing processes​
* Applications of bioplastics in various industries​
* Sustainability and environmental impact of bioplastics​
* Compounding of biodegradable polymers​
* Use of renewable raw materials in plastic production

#### Related Talks & Events

No Talks

#### Keywords

* Thermoplastic starch (TPS)​
* Polylactic acid (PLA)​
* Polyvinyl alcohol (PVOH)​
* Polybutylene succinate (PBS)​
* Polybutylene adipate terephthalate (PBAT)​
* Polyhydroxyalkanoates (PHA)​
* Polycaprolactone (PCL)​
* Cellulose acetate (CA)​
* ZSK twin screw extruder​
* Coperion K-Tron feeders​
* Filling and mixing of biopolymers​
* High filler loading (e.g., CaCO₃, talc)​
* Masterbatch production for bioplastics​
* Cooking extrusion​
* Vacuum and pressure conveying systems​
* Devolatilization​
* Pelletizing​
* Drying of biocompounds​
* Gentle conveying of sensitive materials​
* Process automation in bioplastics production​
* Quality assurance in bioplastics manufacturing

#### Fun Fact

All key components are proprietary developments and are produced at one of our many production sites. Our innovative technologies are the proven result of decades of continuous research and development work.

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[Bioplastics.jpg]] Brochure: [[Bioplastics.pdf]]

# EPS

#### Tags

#Hall14 #Plastics #Applications

#### Description

Expandable polystyrene (EPS) is a rigid and tough foam. EPS is often used for food packaging, building insulation, and packing material either as solid blocks formed to accommodate the item being protected or as loose-fill pellets cushioning fragile items inside boxes.

Time-tested, first class Coperion and Coperion K-Tron technology is optimally suited for the single stage production of EPS. Extremely reliable Coperion K-Tron gravimetric feeders provide high feeding accuracy when adding GPPS, EPS, fillers, flame retardants, nucleating agents, color pigments or foaming agents to the process. Due to its intensive mixing behavior and very gentle product handling the ZSK twin screw extruders ensure optimal dispersion of all ingredients. Micropellets are created via an underwater pelletizer and are subsequently expanded or molded.

#### Advantages

* Space saving set-up of the system
* Flexible production with regard to recipe
* Adjustable pellet size
* Improved product quality due to twin screw compounding
* Highly accurate feeding of key ingredients
* Complete ATEX design available
* Complete corrosion protected process section available

#### Product Range

* **Compounding Machines and Extruders:** Coperion offers ZSK and STS co-rotating twin screw extruders. Both extruder lines secure smoothly interacting process steps and gentle handling of the product with maximum productivity.
* **Twin screw extruder ZSK Mc18** for processes with high torque requirement **Auxiliary equipment** such as side feeder ZS-B oder side devolatilization unit ZS-EG **Laboratory extruder ZSK MEGAlab** **Twin screw extruder STS Mc11** with best price-performance ratio for most standard application
* **Feeding Equipment:** Coperion K-Tron feeders secure continuous, uniform infeed with a very high short-term accuracy and repeatability. Depending on the raw materials and process requirements, a variety of feeder models and configurations are available. Vibratory feeders, single screw feeders or bulk solids pumps for free flowing materials like granulates & pellets, twin screw feeders for difficult powders such as fillers, flame retardants, pigments or other additives as well as liquid feeders and other special feeders are some of the technologies available to design the right solution for each application.
* **Volumetric and gravimetric feeders**
* **Material Handling Equipment:** Coperion and Coperion K-Tron have designed a broad variety of material handling solutions for the production of EPS. Our designs include a complete range of solutions: material storage and discharge components, pneumatic and mechanical conveying systems, weighing and feeding systems, and complete process control systems. Conveying solutions can utilize pressure or vacuum, lean or dense phase, depending on the material characteristics and application properties. Material unloading can be handled from trucks, silos, BBUs (big bag unloaders) to sack-tip stations (small bags) to glove box applications for toxic or dangerous materials. Based on the material properties and requirements we are happy to integrate other functions into our systems, such as delumping, sieving or other equipment dependent on your process.
* **Rotary Valves** **Vacuum Receivers** **Diverter Valves**
* **Plants and Systems:** Coperion offers single source systems including all our material handling, feeding, compounding and extrusion expertise. When planning and installing a compounding plant, you have only one contact and benefit from clearly defined project responsibility.
* **Compounding plants**
* **Global Service:** Our service structure consists of over 350 service engineers and technicians around the globe who not only look after your machines and systems but also after your business. They see themselves as partners who secure your future.
* **Coperion’s comprehensive scope of services**

#### Related Topics

* EPS applications in packaging and insulation​
* Single-stage EPS production process​
* Micropellet production and expansion​

#### Related Talks & Events

No Talks

#### Keywords

* Expandable Polystyrene (EPS)​
* ZSK twin screw extruder​
* Coperion K-Tron gravimetric feeders​
* Underwater pelletizer​
* Flame retardants​
* Nucleating agents​
* Foaming agents​
* ATEX design​
* Corrosion protection​

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[EPS.jpg]] Brochure: [[EPS.pdf]]

# Engineering Plastics

#### Tags

#Hall14 #Plastics #Applications

#### Description

The properties of engineering plastics make them indispensable in the construction of vehicles and machinery, power and electrical engineering, domestic installation and for sport and leisure articles. The processing ranges from coloring and alloying of base polymers right through to incorporating organic and inorganic fillers and reinforcing materials.

From single components like feeders or valves to high-performance compounding systems and extruders or total solutions, Coperion and Coperion K-Tron have the right solution for your process. Our expertise includes material handling, raw material feeding, compounding and the entire downstream process, allowing us to design systems to our customers’ specifications. We deliver solutions to engineering plastics processors that ensure maximum throughput rates with greatest possible economy and highest product quality.

#### Areas of Application

* High-filled and reinforced compounds
* Polymer foam - EPS
* Alloying, coloring
* Production of nanocomposites by mixing layer silicates into PP or PA
* Gentle mixing of micro hollow glass spheres into PP, PA etc.
* Production of long glass fiber compounds by the direct method
* Mixing of wood fibers into thermosplastics
* Removing moisture from bulk materials with max. 40 % humidity
* Devolatilization of polymer solutions with a solvent content of up to 80%
* Recycling of PET bottles or PA carpet fiber waste
* Processing of high temperature polymers such as PEEK
* Filtration of PC melt for optical applications

#### Product Range

* **Compounding Machines and Extruders**: ZSK and STS co-rotating twin screw extruders are the world’s most frequently used extruders for the production of engineering plastics. Every one of our systems features smoothly interacting process steps and gentle handling of the product with maximum productivity.
* **Twin screw extruder** ZSK Mc18 for processes with high torque requirement. **Auxiliary equipment** such as side feeder ZS-B oder side devolatilization unit ZS-EG. **Laboratory extruder ZSK MEGAlab**. **Twin screw extruder STS Mc11** with best price-performance ratio for most standard applications.
* **Feeding Equipment**: With Coperion K-Tron feeders you can rely on a continuous, uniform infeed with a very tight short-term accuracy and repeatability. Depending on the raw materials and process requirements, a variety of feeder models and configurations are available for use in engineering plastics processes. Single screw feeders or bulk solids pumps for free flowing materials like granulates & pellets, twin screw feeders for difficult powders as well as liquid feeders and vibratory feeders are just a few of the options to choose from. State-of-the-art Smart Force Transducer weighing technology ensures that our gravimetric feeders provide a highly accurate result.
* **Volumetric and gravimetric feeders**
* **Material Handling Equipment**: Our many years of experience have given us an unmatched level of understanding of material handling solutions for the manufacturing of Engineering Plastics. Coperion and Coperion K-Tron have designed and installed field-proven solutions for plastic compounding processes all over the globe. Our designs have included complete material storage and discharge components, pneumatic conveying and mechanical conveying systems, weighing and feeding systems, and complete process control systems. We offer a wide range of standard and custom made solutions for the Engineering Plastics industry.
* **Rotary Valves** **Vacuum Receivers** **Diverter Valves**
* **Plants and Systems:** Coperion’s unique feature is the combination of material handling, feeding, compounding and extrusion expertise under one roof. This has decisive advantages for our customers when planning and installing a compounding plants for engineering plastics - as they only have one contact, and clearly defined project responsibility.
* **Compounding plants**
* **Global Service:** Service means more to us than someone stopping by to repair equipment. Our service structure offers much more than that. It consists of much more: over 350 service engineers and technicians around the globe who not only look after your machines and systems but also after your business. They see themselves as partners who secure your future.
* **Coperion’s comprehensive scope of services**

#### Related Topics

* Engineering Plastics
* Vehicle construction
* Machinery construction
* Electrical engineering
* Domestic installations
* Material handling
* Raw material feeding
* Compounding
* High-temperature polymers
* Optical applications
* Compounding plants
* Global service network

#### Related Talks & Events

No Talks

#### Keywords

* Coloring of base polymers
* Alloying of base polymers
* Organic fillers
* Inorganic fillers
* Reinforcing materials
* High-filled compounds
* Reinforced compounds
* EPS (Expandable Polystyrene)
* Nanocomposites
* Layer silicates
* Polypropylene (PP)
* Polyamide (PA)
* Long glass fiber compounds
* Wood fibers
* Thermoplastics
* Polymer solutions
* Solvent content
* PEEK (Polyether Ether Ketone)
* Melt filtration
* Strand pelletizers
* Bulk solids pumps
* Twin screw feeders
* Liquid feeders
* Vibratory feeders
* Vacuum receivers
* Diverter valves

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[EngineeringPlastics.jpg]] Brochure: [[EngineeringPlastics.pdf]]

# Masterbatch

#### Tags

#Hall14 #Plastics #Applications

#### Description

The processing of masterbatch makes great demands on the compounding process: The pigment and additive parts must be mixed into the base polymer absolutely homogeneously. Coperion compounding systems and extruders are particularly suitable for the processing of masterbatch because of their excellent mixing properties and gentle product handling. In addition, Coperion and Coperion K-Tron offer a wide range of material handling components such as feeders, valves and conveying systems for both the raw ingredients and the end product.

With our extensive process know-how we tailor all the process steps from raw materials feeding, conveying, melting, dispersing, homogenizing, devolatilizing, pressure build-up to filtering and pelletizing exactly to the requirements of your masterbatch recipes. This gives you exactly what you expect: a compounding system that is optimally tailored to your application.

The term masterbatch includes concentrates of pigments or additives in a polymer matrix. Masterbatch is mainly available in the form of standard pellets but also in the form of mini-pellets. A distinction is made between white, black and colored masterbatch depending on the pigment type. The premix, split-feed and color-matching processes are available for compounding masterbatch.

#### Areas of Application

* Color masterbatch
* Special effect pigment masterbatch
* Carbon black masterbatch
* PET masterbatch

#### Product Range

* **Compounding Machines and Extruders:** Both the twin screw extruder series ZSK Mc18 and the ZSK Mv PLUS as well as the STS Mc11 are used for compounding of masterbatches. We design – depending on the masterbatch recipe – all processing steps exactly to your requirements. Special developed features such as the feed hopper with quick-release clamps, the masterbatch die head or the easy-to-clean side feeder ZS-B ensure fast, easy cleaning of the extruders and therefore economical recipe and color changes.
* **Twin screw extruder ZSK Mc18 for processes with high torque requirement** **Twin screw extruder ZSK Mv PLUS for processes with high volume requirement** **Twin screw extruder STS Mc11 with best price-performance ratio for most standard applications** **Auxiliary equipment for fast color changes**
* **Feeding Equipment:** Delivering the right materials in the correct amount is critical to the manufacturing of Masterbatch. Coperion K-Tron’s feeding equipment along with our engineering expertise can design a complete material handling solution. Our screw feeders feed the most critical ingredients such as pigments at a high level of accuracy, even at low rates, while the Bulk Solids Pump (BSP) feeders are ideal for consistent feeding of the main polymer. In addition, the KQx and QC feeders incorporate a quick clean design for easy material changes.
* **Single Screw Feeders** **Twin Screw Feeders** **BSP Feeders**
* **Material Handling:** Coperion and Coperion K-Tron have the right material handling solution for your Masterbatch process. Vacuum sequencing systems for bulk material handling and automated feeder refill can improve the accuracy and efficiency of the process. Maximum system performance is achieved by taking into consideration factors such as plant layout, material delivery, material characteristics, batch size and the required conveying rates.
* **Vacuum Loaders** **Vacuum Sequencing Receivers** **Discharge Valves**
* **Plants and Systems:** Coperion has comprehensive know-how and longtime expertise in the design of compounding plants for masterbatch production. From raw materials handling and feeding to the twin screw extruder and down to the pelletizer, we skillfully adapt all system components to each other.
* **Compounding plants**
* **Global Service:** Coperion offers comprehensive services for compounding machines, extruders, feeders, weighers etc. Coperion’s spare parts store for example is one of the largest in the industry with more than 48,000 parts in the data base. These include both original Coperion spare parts and parts from other suppliers.
* **Coperion’s comprehensive scope of services**

#### Related Topics

* Masterbatch compounding processes​
* Color masterbatch applications​
* Special effect pigment masterbatch​
* Carbon black masterbatch​
* PET masterbatch​
* Premix process​
* Split-feed process​
* Color-matching process​

#### Related Talks & Events

No Talks

#### Keywords

* Coperion K-Tron feeders​
* Single screw feeders​
* Twin screw feeders​
* Bulk solids pump feeders​
* Vacuum loaders​
* Vacuum sequencing receivers​
* Diverter valves​
* Discharge valves​
* Compounding plants​
* Material handling solutions​
* Gravimetric feeders​
* Volumetric feeders​
* Quick change designs​
* High pigment loading​
* Gentle product handling​
* Fast color changes​
* Process equipment​

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[Masterbatch.jpg]] Brochure: [[Masterbatch.pdf]]

# PVC Processing

#### Tags

#Hall14 #Plastics #Applications

#### Description

The production of high-quality end products is the key to success when meeting the high demands of the PVC market. Coperion and Coperion K-Tron are specialists in the design, construction and implementation of complete plants and systems for processing of PVC – from the raw material handling and feeding, to dryblend production in the heat-cool mixer, to the cooling and packaging of the pellets.

#### Areas of Application

**Soft-PVC**

* PVC cables: insulation material, sheathing and bedding compounds
* Material for shoes and shoe soles (also PVC-P with foaming agent)
* Material for the extrusion of profiles and hoses (including medical applications)
* Injection molding compounds
* Films and sheets for flooring

**Rigid-PVC**

* Material for the extrusion of profiles for interior and exterior uses
* Injection molding grades for fittings, etc.
* Blow molding grades for bottles, containers, etc.
* Alloys and blends
* Films (calander feeding)

#### Product Range

* **Compounding Machines and Extruders:** The two-stage Kombiplast processing system consisting of a ZSK twin screw extruder and an ES-A single shaft discharge screw forms the heart of PVC compounding plants. The Kombiplast achieves highest product quality at maximum throughputs. This is due, among other things, to its excellent mixing properties, its high process flexibility and the optimal compression and venting properties.
* **Kombiplast** two-stage compounding system **EGR eccentric pelletizer** **STS Mc¹¹ two-stage** compounding system
* **Feeding Equipment:** When feeding PVC, choosing the right feeder is essential to the operation’s success. The properties of the raw materials, the size of the compounding operation and an end-product formula determine whether the material is fed gravimetrically or volumetrically. The type of feeder used (single, twin screw or rotary valve) and the order in which the materials are added are choices our specialists can help you with to improve your operation’s efficiency.
* **Single Screw Feeders** **Twin Screw Feeders**
* **Material Handling:** We are experts in creating material handling solutions for PVC manufacturing plants. Coperion and Coperion K-Tron offer a broad range of field-proven material storage, discharge components, pneumatic conveying, mechanical conveying, weighing and controls systems for your PVC processing needs. We offer a wide range of standard and tailor made solutions for PVC processing. Decades of experience make us a qualified and innovative worldwide partner in your search for processing solutions.
* **Rotary Valves** **Hoppers & bins** **Filters** **Controls**
* **Plants and Systems:** In more than 50 years Coperion has built over 350 PVC processing plants for the production of profiles, panels and pipes as well as PVC compounds. Our plants are among the largest in the world. We have installed, for example, a supply system for a factory with 200 extruders producing window profiles in China and also a PVC compounding system with an annual capacity of 350,000 metric tons in Brazil. Our many years of experience as well as competence in process engineering design ensure that our plants and systems have a high level of operational reliability and safety as well as maximum availability.
* **Plastics processing plants**
* **Service:** Coperion and Coperion K-Tron provide standardized and highly customized service packages for machines, plants and equipment. Our comprehensive range of services secures your plant reliability and maximum lifetime.
* **Coperion’s comprehensive scope of services**

#### Related Topics

* PVC compounding processes​
* Soft-PVC applications (e.g., cables, shoe soles, medical hoses)​
* Rigid-PVC applications (e.g., profiles, fittings, bottles)​
* Two-stage extrusion systems​
* Material handling in PVC production​
* Automation systems for PVC plants​
* Training in PVC processing

#### Related Talks & Events

No Talks

#### Keywords

* Kombiplast KP two-stage compounder​
* ZSK twin screw extruder​
* ES-A single screw discharge​
* EGR eccentric pelletizer​
* Heat-cool mixer​
* Gravimetric feeders​
* Volumetric feeders​
* Rotary valves​
* Vacuum degassing​
* Pellet cooling systems​
* WPC automation system​
* Process training seminars

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[PVC-Processing.jpg]] Brochure: [[PVC-Processing.pdf]]

# Polyolefins

#### Tags

#Hall14 #Plastics #Applications

#### Description

Coperion has a long history as a proven partner for the design and realization of complete polyolefin production plants.

As market and technology leader, we have a unique wealth of now-how for all process stages along the polyolefin production chain – from material handling, powder and pellet mixing to feeding, extrusion and devolatilization through pelletizing and storage.

#### Areas of Applications

* Automotive (electric vehicles)
* Consumer electronics: Laptop computers / mobile phones / tablet PCs / cameras
* Large scale stationary power devices
* High power applications, tools, etc.

#### Key Benefits

* Comprehensive engineering and process know-how in the production of battery components
* High-end twin-screw extruders
* Best in class reliability
* Various formulations tested in our lab tests
* High mixing performance, homogeneity
* Highest throughput rates with high quality levels ensures optimum product quality
* Maximum economic efficiency
* Versatility

#### Product Range

* **Compounding Machines and Extruders:** With its specific torque of 18 Nm/cm3, the ZSK Mc18 twin screw extruder impresses with its extremely high throughput rates, optimum product quality and maximum economic efficiency and the the ideal solutions for the production of battery separator films.
* **ZSK Mc18 Twin Screw Extruder**
* **High-accuracy Feeding Solutions:** Coperion K-Tron feeders are characterized by their high accuracy and reliability. With extensive expertise and a wide range of feeding solutions, Coperion K-Tron offers the right feeder for every application.
* With precise control and information about the bulk solids being fed, you benefit not only from adherence to the exact recipe, but also from reduced maintenance and less downtime. The result is a stable process with reduced costs.
* **Feeding Solutions**
* **Service:** With our comprehensive range of services Coperion and Coperion K-Tron are able to ensure maximum productivity and operational reliability of your compounding lines.
* **Comprehensive range of services**

#### Related Topics

* Battery separator film production​
* Extrusion processes for separator films​
* Material handling in battery component manufacturing​
* Quality control in separator film production

#### Related Talks & Events

No Talks

#### Keywords

* Battery separator films​
* ZSK twin screw extruder​
* Coperion K-Tron feeders​
* Gravimetric feeding systems​
* Polyolefin processing​
* Microporous film extrusion​
* Film stretching techniques​
* Material homogenization​
* Process automation​
* Quality assurance in film manufacturing

#### Fun Fact

All key components are proprietary developments and are produced at one of our many production sites. Our innovative technologies are the proven result of decades of continuous research and development work.

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[Polyelfins.svg]] Brochure: [[Polyelfins.pdf]]

# +++Energy Efficiency+++

#### Tags

#Hall14 #Hall9 #Pavilion #C-Beyond

#### Description

#### Key Features

#### Advantages

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Fun Fact / Goodie

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Sustain App+++

#### Tags

#Hall14 #C-Beyond

#### Description

#### Key Features

#### Advantages

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Fun Fact / Goodie

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# Data Monitoring

#### Tags

#Hall14 #Pavilion #C-Beyond

#### Description

Unlock the full potential of your production environment with our effective Data Monitoring Solutions. Designed to provide real-time insights and customizable dashboards, our solution empowers your team to make data-driven decisions and identify potential for enhancing operational efficiency.

#### Features

* **Real-Time Data Insights:** Harness the power of real-time data monitoring to gain fast, actionable insights. Our solution provides instantaneous visibility into critical metrics, allowing you to respond proactively to changing conditions and maintain optimal machine performance.  - **Customizable Dashboards:** Tailor dashboards to your specific needs for maximum flexibility. Create personalized views that align with your business objectives, giving you a clear and concise overview of the most relevant data. Whether you need to monitor key performance indicators (KPIs), production metrics, or energy usage, our dashboards provide the information you need at a glance.

#### Advantages

* **Proactive Decision-Making:** Stay ahead of operational challenges with real-time insights. This puts you in the position to quickly respond to changing conditions and make informed decisions that optimize production, reduce downtime, and enhance overall efficiency.
* **Improved Collaboration:** Foster collaboration across departments with a centralized platform for data visualization and monitoring. Ensure everyone is on the same page with access to the same data, facilitating better communication and teamwork.
* **Enhanced Operational Performance:** Utilize data-driven insights to optimize processes, reduce waste, and improve resource utilization. By continuously monitoring performance metrics, you can identify areas for improvement and drive continuous operational excellence.
* **User-Friendly Interface:** Our intuitive, user-friendly interface makes it easy for all team members to access, interpret, and act on data. With minimal training required, your team can quickly become proficient in using the platform.

#### Related Topics

* Real-time data monitoring in industrial operations​
* Customizable dashboards for production management​
* Integration of data monitoring with existing systems​
* Energy usage tracking and optimization​
* Proactive decision-making through data insights​
* Improving collaboration via centralized data visualization​
* Enhancing operational performance using data analytics​
* User-friendly interfaces for industrial data platforms​

#### Related Talks & Events

None

#### Keywords

* C-BEYOND digital platform​
* Overall Equipment Effectiveness (OEE) dashboard​
* Downtime tracking tools​
* Lifecycle Manager for predictive maintenance​
* Smart Monitoring & Alarm Management​
* Sustain app for energy consumption analysis​
* Secure IT infrastructure in data monitoring​
* ServiceBox CSB 4.0 for remote maintenance​
* API integration with ERP and MES systems​
* Data-driven decision-making​
* Operational efficiency optimization​
* Energy consumption tracking​
* Custom alerts and thresholds​
* Predictive maintenance insights​
* User-friendly data interfaces

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[Data-Monitoring.jpg]] Brochure: Dateipfad

# Energy Monitoring

#### Tags

#Hall14 #Pavilion #C-Beyond

#### Description

Today, efficient energy management is not just a cost-saving strategy but also a critical component of sustainable operations. Our Energy Monitoring Solution provides detailed insights into energy consumption, allowing you to optimize its usage, reduce operational costs, and achieve your sustainability goals.

#### Features

* **Detailed Energy Consumption Insights:** Gain precise, real-time information about the energy consumption of your plants. Our solution allows you to monitor energy usage at a granular level, identifying which parts or processes are consuming the most energy and providing opportunities for optimization.
* **Monitoring of individual parts:** Break down energy consumption data by individual parts, such as motors, compressors, and HVAC systems. This detailed view helps you understand where energy is being used most heavily and identify inefficiencies or potential areas for improvement.
* **Automated Reports and Alerts:** Stay informed with automated reports and alerts that provide regular updates on energy consumption patterns. Receive notifications when energy usage exceeds defined thresholds, enabling quick response to potential issues and avoiding unnecessary energy costs.

#### Advantages

* **Cost Savings:** By closely monitoring energy consumption and identifying inefficiencies, you can effectively reduce energy waste and lower operational costs. Optimize energy usage across your operations and allocate resources more effectively.
* **Improved Sustainability:** Support your sustainability initiatives by minimizing energy consumption and reducing your carbon footprint. Our solution helps you achieve your concrete energy efficiency targets and comply with environmental regulations.
* **Enhanced Operational Efficiency:** Utilize detailed energy data to optimize processes and enhance overall operational efficiency. Understand the energy demands of different components and adjust operations to maximize overall efficiency.
* **Informed Decision-Making:** Make data-driven decisions regarding energy management with comprehensive insights into consumption patterns. Identify trends and anomalies, allowing for strategic planning and improved energy utilization.

#### Related Topics

* Energy consumption analysis in industrial processes​
* Integration of energy monitoring with production systems​
* Sustainability initiatives in manufacturing​
* Optimization of energy usage in industrial operations​
* Data-driven decision-making for energy management

#### Related Talks & Events

None

#### Keywords

* C-BEYOND Energy Monitoring​
* Real-time energy data visualization​
* Energy efficiency tracking​
* Customizable energy dashboards​
* Integration with existing IT infrastructure​
* Energy consumption patterns​
* Operational performance indicators​
* Sustainable manufacturing practices​
* Process optimization through energy data​
* User-friendly energy monitoring interfaces

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[Energy-Monitoring.jpg]] Brochure: Dateipfad

# OEE Dashboard

#### Tags

#Hall14 #C-Beyond

#### Description

To help you continuously deliver the highest product quality, reliable process data are indispensable. By aggregating and analyzing overall equipment effectiveness (OEE) data, production planners, decision-makers, and even line personnel will always have an overview of the current efficiency of their respective production line. With OEE dashboard, they cannot only identify trends but will also have the necessary knowledge base for continuous improvements.

The OEE dashboard is a key part of Coperion’s digital C-BEYOND platform. The data can be displayed via a secure VPN connection on any web browser. With comprehensive export and analytics features, the OEE dashboard is the universal starting point for any kind of evaluation of your plant data.

#### Features

**Production data monitoring** The OEE live dashboard provides continuously updated information on the key performance indicators (KPIs) of the production line, such as machine availability, capacity and product quality, and enables tracing back to all production data. The OEE calculation is highly customizable to fit the operator’s requirements, whether it is a simple task such as installing an additional feeding system, a general productivity overview or a sophisticated OEE analysis.

The data presented in the dashboards can be can conveniently exported at the push of a button and thus be integrated into a presentation or spreadsheet. Moreover, comprehensive productivity analyses can be performed by comparing historical data with current production data.

**OEE indicators** OEE supports both operators and management to pinpoint productivity issues and track production history for events arising from changes in production. Making performance indicators of the machines available to operators increases transparency as never before. Experience indicates sharing performance indicators with your staff raises their level of commitment and consequently boosts productivity. To ensure a smooth flow of information between line personnel and management, OEE indicators provide uniform evaluation data at both the management and the operational detail level.

**Tracking downtime** Production disruptions due to recipe changes, or maintenance tasks, are automatically recorded and can be evaluated in the OEE dashboard. For in-depth analyses, individual downtime categories can be configured. In the event of machine failures, automatic messages are generated for management and service personnel, enabling faster reactions.

#### Areas of Application

* Continuous processes with high energy consumption
* Processing of all previously torque-limited products such as polyamide with glass, PBT with glass, glass fiber-reinforced polypropylene
* Mixing and dispersing of pigments and additives
* Reinforcement with glass, carbon and other fiber materials
* Degassing of volatile components
* Filling with talcum, calcium carbonate, sawdust or other fillers
* Alloying
* Reactive extrusion
* Chemical reactions such as polymerization, polycondensation and polyaddition
* Direct extrusion

#### Related Equipment

* Feed Enhancement Technology (FET): For significantly increased feeding capacity
* ZS-EG Side Degassing: For increased throughput rates of up to 30% and improved product quality
* ZS-B Side Feeding: Side feeding of fillers and additives in powder or pellet form or cut glass fibers into the process section
* Die Head: Ensures highest throughputs with gentle product handling and maximum heat transfer
* Control Systems: User-friendly solutions for the controlling of twin screw extruders
* Individual Wear and Corrosion Resistant Material Solutions: Wear protection for screw elements and barrels
* Coperion K-Tron Feeders: Smart feeding solutions
* Pelletizers: Adapted exactly to Coperion’s extrusion and compounding systems
* Coperion Test Labs: Discover our test lab capabilities for advanced testing: helping you optimize your processes

#### Related Topics

* Compounding Solutions
* Plastics Industry
* Test Labs

#### Related Talks & Events

Shaping the Future of Plastics by Cooper Cooperson

#### Keywords

* ZSK Mc18
* Twin screw extruder
* High performance
* Torque
* Throughput
* Energy efficiency
* Compounding quality
* Process engineering
* Wear protection
* Control system
* Pigments and additives
* Glass fiber reinforcement
* Degassing
* Side feeding
* Polymerization
* Extrusion
* Pelletizers
* Test labs
* Plastics industry

#### Fun Fact / Goodie

Short delivery times – fast return on investment: Choose your ZSK extruder design from the variety of Coperion’s Fast Track Options, and you can get the machine for your process task with a decisive advantage: a markedly reduced delivery time!

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[OEE-Dashboard.jpg]] Brochure: Dateipfad

# +++3D Simulation+++

#### Tags

#Hall14 #Hall9 #Pavilion #Exhibits

#### Description

#### Key Features

#### Advantages

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Fun Fact / Goodie

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Dew Tector+++

#### Tags

#Hall14 #Exhibits

#### Description

#### Key Features

#### Advantages

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Fun Fact / Goodie

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Dryer HER 150/300+++

#### Tags

#Pavilion #PlasticsRecycling #Exhibits

#### Description

#### Key Features

#### Advantages

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Fun Fact / Goodie

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Feeder Configutator+++

#### Tags

#Hall14 #Exhibits #Feeders

#### Description

#### Key Features

#### Advantages

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Fun Fact / Goodie

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Feeders+++

#### Tags

#Hall14 #ProcessEquipment #Exhibits

#### Description

#### Key Features

#### Advantages

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Fun Fact / Goodie

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# C-Beyond

#### Tags

#Hall14 #C-Beyond #Exhibits

#### Description

C-BEYOND empowers your plant to fully embrace digital transformation throughout its entire lifecycle. With real-time tracking of performance parameters across your production line, detailed Overall Equipment Effectiveness (OEE) evaluations, and advanced AI-driven maintenance, C-BEYOND maximizes your operational efficiency while safeguarding your critical data.

#### Key Features

* **OEE dashboard:** The OEE dashboard provides instant access to comprehensive production data through an intuitive interface. It eliminates the guesswork by offering detailed OEE analysis charts and quick overviews to ensure your plant operates at peak performance. Increased uptime and maximum productivity are just a few clicks away.
* **Downtime Tracking:** Minimize unplanned downtime with C-BEYOND’s advanced downtime tracking tools. Identify the root causes of stoppages, analyze patterns, and implement corrective actions to keep your production line running smoothly.
* **Lifecycle Manager:** Optimize your maintenance strategy with AI-powered maintenance tools that increase plant availability. The C-BEYOND Maintenance Manager offers predictive maintenance insights, helping you to preemptively address potential issues before they result in costly downtimes.
* **Smart Monitoring & Alarm Management:** Stay ahead of operational issues with C-BEYOND’s Monitoring & Alarm Features. These tools provide a customizable overview of your machine or entire plant, allowing you to quickly assess production performance at a glance. The integrated alarm system ensures you and your operators remain informed of critical events, even when you’re away from the machine or not actively using C-BEYOND.
* **Sustain app:** Track your energy consumption and associated CO₂ emissions with the Sustain App. This tool provides a breakdown of energy use from the plant level down to individual equipment, helping you optimize energy efficiency and reduce environmental impact.
* **Secure IT infrastructure:** The C-BEYOND concept enables secure operation and easy integration of systems into your internal networks and IoT environment. Coperion recommends installing an additional machine network that is isolated from the company network and solely dedicated to communication between your machines and the gateway to the internet. A special two-tier hardware concept – with one gateway for a VPN connection to the internet and another for internal data acquisition within the machines – protects the transmission of sensitive production data to the C-BEYOND online platform against unauthorized access.
* **CSB 4.0 service box:** Unlock remote maintenance services for Coperion’s extruders, material handling, feeding systems and entire compounding lines with the gateway ServiceBox CSB 4.0. These services help ensure seamless operation of both your compounding lines and extruders as well as material conveyors and their associated components. The ServiceBox CSB 4.0 hardware is designed for quick retrofit on all existing Coperion machines as the key pillar for a secure, dedicated, two-tier IT architecture.

#### Advantages

##### Energy Monitoring

* **Cost Savings:** By closely monitoring energy consumption and identifying inefficiencies, you can effectively reduce energy waste and lower operational costs. Optimize energy usage across your operations and allocate resources more effectively.
* **Improved Sustainability:** Support your sustainability initiatives by minimizing energy consumption and reducing your carbon footprint. Our solution helps you achieve your concrete energy efficiency targets and comply with environmental regulations.
* **Enhanced Operational Efficiency:** Utilize detailed energy data to optimize processes and enhance overall operational efficiency. Understand the energy demands of different components and adjust operations to maximize overall efficiency.
* **Informed Decision-Making:** Make data-driven decisions regarding energy management with comprehensive insights into consumption patterns. Identify trends and anomalies, allowing for strategic planning and improved energy utilization.

##### Data Monitoring

* **Proactive Decision-Making:** Stay ahead of operational challenges with real-time insights. This puts you in the position to quickly respond to changing conditions and make informed decisions that optimize production, reduce downtime, and enhance overall efficiency.
* **Improved Collaboration:** Foster collaboration across departments with a centralized platform for data visualization and monitoring. Ensure everyone is on the same page with access to the same data, facilitating better communication and teamwork.
* **Enhanced Operational Performance:** Utilize data-driven insights to optimize processes, reduce waste, and improve resource utilization. By continuously monitoring performance metrics, you can identify areas for improvement and drive continuous operational excellence.
* **User-Friendly Interface:** Our intuitive, user-friendly interface makes it easy for all team members to access, interpret, and act on data. With minimal training required, your team can quickly become proficient in using the platform.

#### Future Features

* **Energy monitoring:** Upcoming versions of the OEE dashboard will also be able to record energy flows of the extrusion line. This function will allow for process analysis by evaluating the energy consumption data of individual assemblies, such as housing temperature.
* **Maintenance management:** For easy integration of maintenance management in the OEE analysis, operation-critical maintenance intervals will be recorded. The system will support preventive maintenance through fixed maintenance intervals, as well as predictive maintenance through condition-based maintenance intervals.

#### Related Topics

* Digitalization
* Digital Production
* Data Analysis

#### Related Talks & Events

Leveling up Production Digizalization by Bettina König

#### Keywords

* C-BEYOND
* Digital platform
* Extrusion
* Compounding
* Plastics industry
* Plastics recycling
* Chemical industry
* Battery industry
* Food industry
* Overall Equipment Effectiveness (OEE)
* Downtime tracking
* AI-powered maintenance
* Predictive maintenance
* Condition-based maintenance
* Smart monitoring
* Alarm management
* ServiceBox CSB 4.0
* Two-tier hardware concept
* VPN connection
* Data encryption
* OPC 40084 standard
* OPC UA
* Energy monitoring
* Sustainability
* Real-time data
* Data analytics
* Remote maintenance
* Digital transformation
* Industry 4.0
* Process optimization
* Operational efficiency
* Data security

#### Fun Fact / Goodie

Coperion’s experts will do the C-BEYOND system setup for the configuration of features as well as data connections to the C-BEYOND platform or between the machines. They will support customers local IT team to integration into the existing network structure.

After the initial setup, customer staff will fully control the system administration and control data access. The customer can always see which data are being collected. Many of the features, such as “downtime tracking” and “OEE calculation”, are customizable. Coperion’s service team is just a call away to support customers when setting up new features or when there are technical issues.

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[C-Beyond.jpg]] Brochure: Dateipfad

# FPM Flat-Bottom Feeder

#### Tags

#Pavilion #ProcessEquipment #Exhibits

#### Description

Four models, zero features you don’t need: The all-new ProRate PLUS is a feeder that may seem modest, but it shines when you use it for the first time (and, of course, every time after that). It’s a feeder that is simple to integrate, to fill, to operate, to clean. It is robust and reliable. It gets the job done, no matter what. The all new ProRate PLUS is a lot of things, but most of all, it’s surprisingly powerful.

#### Advantages

* **SIMPLE** to install and operate
* **ROBUST** design
* **RELIABLE** feeding, weighing and control technology
* Economical feeding solution
* State-of-the-art digital weighing technology for reliable performance
* ProClean Rail for easy cleaning
* Both vertical and horizontal outlets included
* ProFlow flow aid for moderate flowing bulk materials
* Fast delivery

#### Areas of Application

Reliable feeding of free-flowing bulk materials in plastic processing applications. The ProRate PLUS Continuous Gravimetric Feeder Line has been designed with the specific requirements of the plastics processing industry in mind. The single screw feeders are available in three sizes are designed for free to moderate flowing bulk materials and a twin screw feeder is available for moderate to free flowing powder additives. Due to its compact design, the ProRate PLUS not only works as a single unit but also integrated into a cluster of up to six feeders which can be easily grouped around the same extruder inlet.

#### Related Equipment

* **ProClean Rail:** Easy access for cleaning and maintenance is always guaranteed thanks to the patent-pending ProClean Rail system. ProClean Rail is designed to allow the base unit to be retracted the rear and then rotated for optimal access. This facilitates maintenance and cleaning of the feeding unit without having to move the feeder.
* **ProFlow Bulk Solid Activator:** The ProFlow bulk solid activator is a completely new and cost-effective solution to feed powders.
* **ProRate PLUS Load Cells:** P-SFT Smart Force Transducer load cells, operating under compression, provide accurate, stable and reliable digital weight measurement under a broad range of operating conditions.
* **ProRate PLUS PCM Control Modules:** With the ProRate PLUS control system each feeder has its own PCM control module, installed directly at the feeder. In a line setting, up to eight feeders can be controlled from one PCM-KD. Connection between feeders and operator interface is via an industrial network. All setup, diagnostics and operator interface functions are controlled via a the PCM-KD interface. With its tight integration into the feeder, the PCM can be pre-wired and pre-tested in the manufacturing plant.

#### Related Topics

* **ProRate PURE Feeders & Mixers:** Quick and easy on-machine feeding
* **Pneumatic Conveying Systems:** We keep your material moving
* **Coperion K-Tron Feeders:** Advanced feeding solutions

#### Related Talks & Events

No Talks @ K2025

#### Keywords

* ProRate PLUS
* Loss-in-weight gravimetric feeder
* Free-flowing bulk materials
* Plastics processing industry
* Single screw feeder
* Twin screw feeder
* ProFlow bulk solid activator
* ProClean Rail
* Smart Force Transducer (SFT) weighing technology
* Feed rate range: 3.3 to 4,800 dm³/h
* Compact design
* Easy integration
* Simple maintenance
* Reliable operation
* Cost-effective solution
* Quick material change
* Integrated control system
* PROFIBUS and Ethernet connectivity
* Modular design
* Fast delivery times

#### Fun Fact / Goodie

A feeder that makes you wonder why we haven’t invented it sooner.

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# Hydroclone Unit HER

#### Tags

#Pavilion #ProcessEquipment #Exhibits

#### Description

Hydrocyclones are being offered for similar separation tasks like the swimsink tanks in special cases where cyclones achieve a better separating efficiency than swim-sink tanks. This unit works with a pressure force of a feeding pump and reaches a higher separation effect (approx. 20 times earth’s gravity) by using the rotational forces of the moving water. The PE/PP material is leaving the Hydrocyclone at the upper end with the main-stream of the water, sinking material, PET, at the lower end with only small amounts of water. By choosing the nozzle sizes at the outlets of the cyclone the selectivity can be adjusted. Necessary equipment of a hydrocyclone circuit is a mixing tank (turbo washer), a feed-ing hydro.

#### Related Topics

* Recycling
* Plastic Waste Processing
* Circular Economy

#### Related Talks & Events

No Talks @ K 2025

#### Keywords

* Hydrocyclone
* Separation efficiency
* Swim-sink tank
* Rotational forces
* PE, PP, PET
* Mixing tank
* Turbo washer
* Heavy medium hydrocyclone
* Flat bottom cyclone
* Glass, metal, stone separation
* Double gate valve
* Stainless steel construction
* Shredder
* Granulators
* Pulverizing systems
* Pre-washing units
* Friction washers
* Mechanical & thermal drying
* Water processing
* Agglomeration
* Plastcompactors

#### Fun Fact / Goodie

Special Features: Replaceable apex on discharge, Optional insulated cylinder housing for heated water

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# SMS 80/200

#### Tags

#Hall9 #ProcessEquipment #Exhibits

#### Description

The SMS models are machines for particularly demanding applications: the size reduction of heavy lumps, tough fibres, extremely thin films or simply very large amounts of material.

Granulators of the SMS series are also available as washing granulators. In this case contaminated plastics are granulated with the addition of large quantities of water. The resulting friction produces a good washing effect. Washing and shredding are combined into one operation.

Here we produce machines with a working width from 500 to 2000 millimetres and drive motors from 22 to 250 kilowatts.

The SMS is the preferred machine for recycling businesses, since with an equally high performance they can easily be converted from the granulation of high-volume hollow materials to the granulation of thick-walled panels or lumps.

If required, machines of the SMS series can be supplied with steel plating. The options range from basic replaceable wear plates in the top of the granulator and (depending on wear and tear) replaceable stator knife supports all the way to screwed, replaceable rotor knife support plates – and this is all done with wear-proof materials of appropriate hardness and toughness.

#### Advantages

* Heavy duty welded/machined steel construction
* Split housing design above the rotor for maximum access
* Outboard mounted pillow block bearings
* Rotor and bed knives are adjusted from outside of the granulator
* Constant cutting circle due to adjustable knives
* Compact and space-saving design

#### Key Features

* Heavy-duty knife granulator for tough applications and maximum outputs
* Flexible design for multiple applications by means of a removable deflection wedge
* Energy-efficient double cross cutting action
* Constant cutting circle due to adjustable rotor and bed knives
* Optimum access to the cutting chamber for ease of cleaning and maintenance

#### Related Equipment

Herbold granulators can be incorporated into any automated production line or process as we have a large number of options available as well as a design team to meet your needs. Options include but not limited to the following:

* Electronic metal separation and magnetic units for extraction of foreign metallic objects
* Air extractors and screening machines for separation of dust particles and specific light parts on the granulate
* Amperage overload cut-out for regulating the load and amount of feed articles during the loading of the machine
* Pneumatic and mechanical loading units for feeding the machine or for removal of the finished granulate
* Pre-crushing unit for reduction of heavy-duty materials and to regulate a continuous flow of material
* Pulverizers for fine particle size
* Storage silos before and after the granulator
* Conveyor belts and feed rolls for sheeting, edge trims and webbing

#### Related Topics

* Granulators & Shredders
* Herbold Meckesheim
* Plastic Waste Processing

#### Related Talks & Events

No Talks @ K 2025

#### Fun Fact / Goodie

With the overall ambient noise of operating plants on the rise sound insulation gains more and more importance. According to the application Herbold offers different sound insulation concepts: e. g. 2 piece sound insulation boxes, sound insulation cabins, sound insulation tunnels for conveyor feed applications, sound insulation for pneumatic conveyors. With the customers design requirement Herbold’s design team can provide a suitable solution to meet those needs.

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[SMS-80-200.jpg]] Brochure: [[SMS-80-200.pdf]]

# STS 35 Mc11 Masterbatch

#### Tags

#Hall14 #ExtruderCompoundingMachines #Exhibits

#### Description

With its specific torque of 11.3 Nm/cm3 STS Mc11 compounders sets standards: it features up to 27% higher throughput rates than the preceding model, while the higher degree of screw fill results in a decrease of melt temperature, thus improving compound quality. It incorporates the full process and quality know-how of Coperion.

The STS Mc11 series is exclusively equipped with European, Coperion branded gearboxes. Maximum screw speed has been increased from 800 to 900 min-1. To improve cleaning and facilitate quick changeovers for masterbatch applications, the STS twin screw extruder also features optimized hoppers with inserts and a redesigned die head. The screw shaft coupling is similar to the one long proven in the ZSK Mc18 series. The optimized base frame withstands torsion under maximum stress.

The STS Mc11 compounder covers most standard applications in process technology. It offers high productivity at an attractive price-performance ratio. Production of the STS Mc11 is in Nanjing, China, in compliance with CE directives. The result: A high-performance compounding system with low investment costs which ensures a fast return on investment. The modular design of the process section allows maximum flexibility in production at process lengths of 24 to 68 D

#### Advantages

* Proven Coperion manufacturing standards
* CE certificate
* Base frame withstanding torsion under ­maximum stress
* Screw speeds of up to 900 min-1 depending on the machine configuration and application
* Two operation and maintenance friendly machine control concepts – BasicMaster (relay control) and TouchMaster (PLC control)
* European, Coperion branded, high-performance gearboxes with high-tech safety clutch for safe transmission of high torque
* Die head with improved heating system and optimized flow geometry
* 4 D individual barrel with precision single zone tempering
* High performance brass heater shells and water flash cooling with flexible connection to water manifold for optimal processing conditions in every heating zone
* Self-wiping, co-rotating screws for fast, easy changes in product and color
* A variety of materials available for the process section: ­nitrided steel for the basic version, special high-alloy wear-protected steels for demanding processes with a high stress level

#### Areas of Application

* Filling and reinforcing of engineering plastics
* Alloying and filling of polyolefins/TPE
* Coloring of polyolefins and engineering plastics
* Production of color masterbatch, flame retardant masterbatch, filler masterbatch and additive masterbatch
* Recycling of regrind plastics, etc.
* Cable compounds, incl. PVC, HFFR, XLPE
* Other applications

#### Related Equipment

* STS Mc11 Two-stage System: For cable Compounds
* Coperion K-Tron Feeders: Smart feeding solutions

#### Related Topics

* Masterbatch
* Engineering Plastics

#### Related Talks & Events

No Talks

#### Keywords

* STS Mc11 Compounder
* Twin screw extruder
* High performance
* Specific torque
* Throughput rate
* Energy efficiency
* Compounding quality
* Process engineering
* Wear protection
* Control system
* Engineering plastics
* Masterbatches
* Glass fiber reinforcement
* Pigments and additives
* Degassing
* Side feeding
* Polymerization
* Extrusion
* Pelletizers
* Test labs
* Plastics industry

#### Fun Fact / Goodie

Short delivery times – fast return on investment: Choose your ZSK extruder design from the variety of Coperion’s Fast Track Options, and you can get the machine for your process task with a decisive advantage: a markedly reduced delivery time!

#### Technical Data

| **STS Mc11** | **25** | **35** | **50** | **65** | **75** | **96** |
| --- | --- | --- | --- | --- | --- | --- |
| Spezifisches Drehmoment Md/a³ [Nm/cm³] | 11,3 | 11,3 | 11,3 | 11,3 | 13,6 | 11,3 |
| Max. Drehmoment pro Welle [Nm] | 106 | 305 | 835 | 1.590 | 2.772 | 5.350 |
| Max. Schneckendrehzahl [min-1] | 1.200 | 900 | 900 | 900 | 900 | 900 |
| Max. Motorleistung [kW I Hp] | 30 I 40 | 60 I 81 | 165 I 221 | 315 I 422 | 483 I 648 | 706 I 947 |

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[STS35-MC11.jpg]] Brochure: [[STS35-MC11.pdf]]

# ZSK FilCo

#### Tags

#Pavilion #ExtruderCompoundingMachines #Exhibits

#### Description

For recycling of post-consumer recyclate (PCR) or any highly contaminated polymer, Coperion offers the innovative ZSK FilCo filtration compounder that allows filtration and compounding in a single production step.

With the ZSK FilCo system, waste plastic is fed into a ZSK twin screw extruder, where it is melted, homogenized and devolatilized. The melt is then fed through a filter to remove all contaminants before it is fed back into the same ZSK extruder to be compounded with reinforcing materials or fillers.

Compared to the two-step production lines that have been the norm until now, Coperion’s ZSK FilCo is distinguished by a markedly more streamlined equipment set-up. Energy consumption and emissions for the extrusion process are reduced by more than 50%. Moreover, the ZSK FilCo is able to achieve a significantly higher product quality. Recompounds can be produced much faster and Coperion K-Tron gravimetric feeders ensure the high-accuracy incorporation of additives for an optimal result.

#### Advantages

* Filtration and compounding in a single production step
* One single melting step ensures gentle processing of the recyclate
* Reduced footprint thanks to streamlined configuration
* Over 50% reduction in energy consumption and emissions during the compounding process
* Accurate gravimetric feeding of all product streams with no fluctuations
* High end product quality and excellent energy efficiency

#### Areas of Application

* Recycling of post-consumer waste (PCR)
* Recycling of any highly contaminated polymers

#### Related Equipment

* Feed Enhancement Technology (FET): For significantly increased feeding capacity
* ZS-EG Side Degassing: For increased throughput rates of up to 30% and improved product quality
* ZS-B Side Feeding: Side feeding of fillers and additives in powder or pellet form or cut glass fibers into the process section
* Die Head: Ensures highest throughputs with gentle product handling and maximum heat transfer
* Control Systems: User-friendly solutions for the controlling of twin screw extruders
* Individual Wear and Corrosion Resistant Material Solutions: Wear protection for screw elements and barrels
* Coperion K-Tron Feeders: Smart feeding solutions
* Pelletizers: Adapted exactly to Coperion’s extrusion and compounding systems
* Coperion Test Labs: Discover our test lab capabilities for advanced testing: helping you optimize your processes

#### Related Topics

* Filtration and Compounding
* Polymer Recycling
* Extrusion

#### Related Talks & Events

Shaping the Future of Plastics by Cooper Cooperson

#### Keywords

* ZSK FilCo Filtration Compounder
* Twin screw extruder
* Post-consumer recyclate (PCR) recycling
* Contaminated polymer processing
* Single-step filtration and compounding
* Energy efficiency
* Reduced emissions
* High product quality
* Gravimetric feeding
* Additive incorporation
* Reinforcing materials
* Fillers
* Devolatilization
* Pelletizing
* Plastics upcycling

#### Fun Fact / Goodie

Energy consumption and emissions for the extrusion process are reduced by more than 50%. Moreover, the ZSK FilCo is able to achieve a significantly higher product quality.

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[ZSK-FilCo.jpg]] Brochure: [[ZSK-FilCo.pdf]]

# ZSK MC 18

#### Tags

#Hall14 #ExtruderCompoundingMachines #Exhibits

#### Description

The ZSK Mc18 high performance twin screw extruder is a superlative product. With its torque of 18 Nm/cm3, it has made a name for itself on the market as a throughput champion for products with high torque requirement such as engineering plastics. The 30% increase in torque compared to the predecessor extruder model ZSK Mc PLUS leads to increases in throughput of up to 100%. Therefore the ZSK Mc18 twin screw extruder ensures production with maximum economic efficiency. The optimum price/performance ratio, the extremely energy-efficient operation, the wide range of applications, and the associated high level of flexibility of the machine are additional advantages.

#### Advantages

* More than 30% increase of specific torque
* Up to 100% increase in the throughput rate
* Increased energy efficiency by reduced specific energy input
* Greatly improved productivity
* Improved compounding quality by gentle processing with a higher filling degree
* Reduced compound temperature at much greater throughput rates Flexible, wide area of applications
* Proven high ZSK safety enabled by new designs and developments
* Gentle product handling for maximum quality
* Maximum flexibility in product changes and machine modifications
* Optimum graduation of the machine sizes
* Excellent mixing behaviour
* Reliable scale-up
* Very wide range of wear protection solutions
* Comprehensive process engineering support
* Flexible solutions for control system
* Comprehensive after-sales services by worldwide Coperion service network
* Large number of application-specific solutions to increase throughput and productivity, e.g. quick-release features, side devolatilization ZS-EG, Feed Enhancement Technology (FET)

#### Areas of Application

* Continuous processes with high energy consumption
* Processing of all previously torque-limited products such as polyamide with glass, PBT with glass, glass fiber-reinforced polypropylene
* Mixing and dispersing of pigments and additives
* Reinforcement with glass, carbon and other fiber materials
* Degassing of volatile components
* Filling with talcum, calcium carbonate, sawdust or other fillers
* Alloying
* Reactive extrusion
* Chemical reactions such as polymerization, polycondensation and polyaddition
* Direct extrusion

#### Related Equipment

* Feed Enhancement Technology (FET): For significantly increased feeding capacity
* ZS-EG Side Degassing: For increased throughput rates of up to 30% and improved product quality
* ZS-B Side Feeding: Side feeding of fillers and additives in powder or pellet form or cut glass fibers into the process section
* Die Head: Ensures highest throughputs with gentle product handling and maximum heat transfer
* Control Systems: User-friendly solutions for the controlling of twin screw extruders
* Individual Wear and Corrosion Resistant Material Solutions: Wear protection for screw elements and barrels
* Coperion K-Tron Feeders: Smart feeding solutions
* Pelletizers: Adapted exactly to Coperion’s extrusion and compounding systems
* Coperion Test Labs: Discover our test lab capabilities for advanced testing: helping you optimize your processes

#### Related Topics

* Compounding Solutions
* Plastics Industry
* Test Labs

#### Related Talks & Events

Shaping the Future of Plastics by Cooper Cooperson

#### Keywords

* ZSK Mc18
* Twin screw extruder
* High performance
* Torque
* Throughput
* Energy efficiency
* Compounding quality
* Process engineering
* Wear protection
* Control system
* Pigments and additives
* Glass fiber reinforcement
* Degassing
* Side feeding
* Polymerization
* Extrusion
* Pelletizers
* Test labs
* Plastics industry

#### Fun Fact / Goodie

Short delivery times – fast return on investment: Choose your ZSK extruder design from the variety of Coperion’s Fast Track Options, and you can get the machine for your process task with a decisive advantage: a markedly reduced delivery time!

#### Technical Data

| ZSK | Max. Drehmoment pro Welle | Spezifisches Drehmoment Md/a³ | Max. Schnecken-drehzahl | Max. Motor-leistung N | Schnecken-durchmesser |
| --- | --- | --- | --- | --- | --- |
| [Nm] | [Nm/cm³] | [min⁻¹] | [kW] | [mm] |  |
| 18 MEGAlab\* | 38 | 11,3 | 1.200 | 10 | 18 |
| 26 Mc18 | 140 | 15 | 1.200 | 37 | 25 |
| 32 Mc18 | 315 | 18 | 1.200 | 83 | 32 |
| 45 Mc18 | 930 | 18 | 1.200 | 245 | 45 |
| 58 Mc18 | 2.000 | 18 | 1.200 | 528 | 58 |
| 70 Mc18 | 3.500 | 18 | 1.200 | 924 | 70 |
| 82 Mc18 | 5.700 | 18 | 1.200 | 1.504 | 83 |
| 92 Mc18 | 7.500 | 17 | 1.000 | 1.649 | 92 |
| 119 Mc18 | 15.300 | 17 | 1.000 | 3.364 | 118 |
| 133 Mc PLUS | 20.000 | 15 | 1.000 | 4.398 | 133 |

#### Resources

3D-Model: Dateipfad Video: [[ZSK-MC-18.mp4]] Image: [[ZSK-MC-18.jpg]] Brochure: [[ZSK-MC-18.pdf]]

# +++Feeder Portfolio+++

#### Tags

#Hall14 #Pavilion #Hall9 #Feeders

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++K-Vision+++

#### Tags

#Hall14 #Pavilion #Feeders

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# ProRate PLUS

#### Tags

#Hall14 #Pavilion #Feeders #Plastics #PlasticsRecycling

#### Description

Four models, zero features you don’t need: The all-new ProRate PLUS is a feeder that may seem modest, but it shines when you use it for the first time (and, of course, every time after that). It’s a feeder that is simple to integrate, to fill, to operate, to clean. It is robust and reliable. It gets the job done, no matter what. The all new ProRate PLUS is a lot of things, but most of all, it’s surprisingly powerful.

#### Advantages

* **SIMPLE** to install and operate
* **ROBUST** design
* **RELIABLE** feeding, weighing and control technology
* Economical feeding solution
* State-of-the-art digital weighing technology for reliable performance
* ProClean Rail for easy cleaning
* Both vertical and horizontal outlets included
* ProFlow flow aid for moderate flowing bulk materials
* Fast delivery

#### Areas of Application

Reliable feeding of free-flowing bulk materials in plastic processing applications. The ProRate PLUS Continuous Gravimetric Feeder Line has been designed with the specific requirements of the plastics processing industry in mind. The single screw feeders are available in three sizes are designed for free to moderate flowing bulk materials and a twin screw feeder is available for moderate to free flowing powder additives. Due to its compact design, the ProRate PLUS not only works as a single unit but also integrated into a cluster of up to six feeders which can be easily grouped around the same extruder inlet.

#### Available Models

* **ProRate PLUS-S Feeder:** The ProRate PLUS-S feeder is designed for gravimetric feeding of free flowing bulk solids that do not require agitation. It is ideal for feeding pellets in the plastics industry. The single screw feeder with extension hopper is suspended on a single-point weighing system in a compact frame. Proven Smart Force Transducer (SFT) weighing technology provides accurate and reliable performance.
* **ProRate PLUS-M Feeder:** The ProRate PLUS-M feeder is designed for gravimetric feeding of free flowing bulk solids that do not require agitation. It is ideal for feeding pellets in the plastics industry. The single screw feeder with extension hopper is suspended on a single-point weighing system in a compact frame. Proven Smart Force Transducer (SFT) weighing technology provides accurate and reliable performance.
* **ProRate PLUS-L Feeder:** The ProRate PLUS-L feeder is designed for gravimetric feeding of free flowing bulk solids that do not require agitation. It is ideal for feeding pellets in the plastics industry. The single screw feeder with extension hopper is suspended on a two-point weighing system in a compact frame. Proven Smart Force Transducer (SFT) weighing technology provides accurate and reliable performance.
* **ProRate PLUS-MT Feeder:** The ProRate PLUS-MT twin screw feeder is designed for gravimetric feeding of moderate to free flowing bulk solids. It is ideal for feeding powder additives in the plastics industry. The twin screw feeder with extension hopper is suspended on a single-point weighing system in a compact frame. Proven Smart Force Transducer (SFT) weighing technology provides accurate and reliable performance.

#### ProRate PLUS Technology

* **Proclean Rails:** Easy access for cleaning and maintenance is always guaranteed thanks to the patent-pending ProClean Rail system. ProClean Rail is designed to allow the base unit to be retracted the rear and then rotated for optimal access. This facilitates maintenance and cleaning of the feeding unit without having to move the feeder. Thanks to patent-pending state-of-the-art magnetic coupling technology, the bellows and screws can be released from the outlet section without tools, while still being strong enough to guarantee the required holding force during operation. All ProRate PLUS models are outfitted with the ProClean Rail as a standard feature.
* **Proflow Bulk Solid Activator:** The ProFlow bulk solid activator is a completely new and cost-effective solution to feed powders.The ProFlow bulk solid activator consists of a compact electromagnetic vibrating device, which is mounted at the feeder trough and activates the polyurethane transition hopper as well as the feed hopper to keep bulk materials moving. The device operates at an optimized frequency and amplitude to ensure minimal energy consumption and maximum product flow. The device is self-calibrating, automatically tuning to the correct resonant frequency of the feeder, which results in extremely low energy consumption. Thanks to its smart electronic control ProFlow only uses 3.6 Watts. Tests with a wide range of bulk materials have shown that ProFlow is an ideal solution for a variety of bulk materials. For the smaller PLUS-S model the ProFlow activator is implemented in conjunction with specially developed overflight screws. The overflight acts as a screw filler even at low speed and helps to ensure that the bulk material is always in motion in the area of the screw intake, resulting in optimal screw fill.
* **ProRate PLUS Load Cells:** P-SFT Smart Force Transducer load cells, operating under compression, provide accurate, stable and reliable digital weight measurement under a broad range of operating conditions. The P-SFT exploits the dependency of a vibrating wire’s resonant frequency on its tension to measure applied loads. Through mechanical means the applied load is transmitted to the wire, causing a change in its resonant frequency from which the weight of the applied load is computed by the onboard microprocessor. A fully calibrated (linearized, spanned and temperature compensated) signal is transmitted via RS 485 serial communication to the controller.
* **ProRate PLUS PCM Control Modules:** With the ProRate PLUS control system each feeder has its own PCM control module, installed directly at the feeder. In a line setting, up to eight feeders can be controlled from one PCM-KD. Connection between feeders and operator interface is via an industrial network. All setup, diagnostics and operator interface functions are controlled via a the PCM-KD interface. With its tight integration into the feeder, the PCM can be pre-wired and pre-tested in the manufacturing plant.

#### Related Topics

* **ProRate PURE Feeders & Mixers:** Quick and easy on-machine feeding
* **Pneumatic Conveying Systems:** We keep your material moving
* **Coperion K-Tron Feeders:** Advanced feeding solutions

#### Related Talks & Events

Shaping the Future of Plastics by Cooper Cooperson

#### Keywords

* ProRate PLUS feeders​
* Single screw feeder​
* Twin screw feeder​
* ProRate PLUS-S​
* ProRate PLUS-M​
* ProRate PLUS-L​
* ProRate PLUS-MT​
* ProClean Rail system​
* ProFlow bulk solids activator​
* Smart Force Transducer (SFT) weighing technology​
* Feed rates from 3.3 to 4800 dm³/h​
* Compact feeder design​
* Cluster arrangement of feeders​
* Material handling in plastics industry​
* Feeder maintenance and cleaning​
* Feeder integration with process control systems​
* Feeding of pellets, granules, fibers, and powders​
* Space-saving feeder configurations​
* Feeder applications in extrusion and compounding​
* Economical feeding solutions

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[ProRate-PLUS.jpg]] Brochure: [[ProRate-PLUS.pdf]]

# +++Invitation to Other Booths+++

#### Tags

#Hall14 #Hall9 #Pavilion #GeneralTopics

#### Description

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# Coperion in General

#### Tags

#Hall14 #Hall9 #Pavilion #GeneralTopics

#### Description

Shape what matters for tomorrowTM – Guided by our Purpose, Coperion develops innovative solutions and products for various challenges in the plastics, plastics recycling, chemical, battery, food, pharmaceutical and mineral industries.

Coperion is a global industrial and technological company in the areas of compounding and extrusion systems, sorting, shredding and washing equipment, including conveying, mixing and feeding technology. In our three Divisions, Performance Materials, Food, Health & Nutrition as well as Aftermarket Sales & Service, Coperion employs 5,000 people at 50 locations worldwide striving to create the future of tomorrow.

#### Facts and Figures

* **140 Years** of experience in process technology
* **16 industry-leading brands** belong to the Coperion Group
* **14 Test Centers** worldwide for verifying tomorrow’s ideas today
* **50 locations** worldwide
* **10 manufacturing** sites worldwide
* **5,000 employees** worldwide
* **More than 10,000 installed bulk materials handling systems** worldwide
* **More than 15,000 installed compounding machines & extruders** worldwide
* **More than 20,000 installed feeders and pneumatic conveying systems** worldwide

#### Our Purpose

**SHAPE**  
We are the engineers, designers, manufacturers, and molders, who take pride in our expertise and technical ability – and allow the Company to put the right pieces together to bring forward new solutions for our customers.

**WHAT MATTERS**  
Our end products affect the world. They impact life across how people live, work, play, travel, eat, and heal.

**FOR TOMORROW**  
We continue to look for what’s next. As innovators in our respective industries, we work to shape a stronger future for our world.

#### Our Core Values

Our core values describe the values and behaviors that we want to guide our performance and conduct. How we work and how we interact with our colleagues and customers.

* Win as One
* Partner with Possibility
* Make it Matter
* Drive to Deliver

#### Our Mission

Coperion’s mission is to “shape what matters for tomorrow,” aligning with its parent company, Hillenbrand’s vision. This commitment drives Coperion to address current and future challenges by delivering innovative solutions across various sectors, including plastics processing, recycling, chemical production, battery manufacturing, food, and pharmaceuticals. ​

In pursuit of its strategic objectives, Coperion continually invests in expanding its technological capabilities. For instance, the company has recently expanded its test center in Niederlenz, Switzerland, to conduct more comprehensive and diverse testing, particularly for materials requiring containment. This expansion enhances Coperion’s ability to provide tailored solutions to industries such as battery manufacturing, chemicals, pharmaceuticals, and food processing.​

Furthermore, Coperion’s integration of advanced digital solutions, such as the C-BEYOND platform, exemplifies its commitment to innovation. This platform offers features like predictive maintenance, energy consumption tracking, and secure IT infrastructure, aiming to maximize plant efficiency and sustainability. ​

Through these initiatives, Coperion demonstrates a clear strategic focus on innovation, customer-centric solutions, and sustainable practices, all aligned with its mission to shape a better tomorrow.

#### Our Divisions

* **Performance Material:** Innovative Technologies for processing and recycling plastics. From individual component to complete system solutions, all from a single source.
* **Food, Health & Nutrition:** Offering specialized solutions for the food, pet food, baking, pharmaceutical, and cosmetics industries. To make the everyday a bit better.
* **Aftermarket Sales & Service:** Over 220 service employees worldwide who take care of not only your machines and plants but also your business.

#### Coperion as Part of Hillenbrand

Coperion is a subsidiary company of Hillenbrand (NYSE: HI), a global industrial corporation offering highly developed processing machinery and solutions for customers in a variety of industries around the world.

#### Brands associated with Coperion

* Baker Perkins
* Bakon
* Coperion
* Coperion K-Tron
* DIOSNA
* Gabler Engineering
* Herbold Meckesheim
* Kemutec
* Mucon
* Peerless Food Equipment
* Raymond Bartlett Snow
* Coperion, formerly Schenck Process Food and Americas Performance Materials Business
* Shaffer
* Shick Esteve
* Stock
* Unifiller Systems
* VMI

#### History of Coperion

​Coperion GmbH, headquartered in Stuttgart, Germany, has a rich history rooted in the late 19th century. In 1879, Hermann Werner and Paul Pfleiderer established the company Werner & Pfleiderer in Cannstatt, near Stuttgart, focusing on the production of kneading and mixing machines. This enterprise laid the foundation for what would become Coperion. ​

Throughout the 20th century, Werner & Pfleiderer expanded its expertise in machinery manufacturing, particularly in mixing and extrusion technologies. A significant milestone was achieved in 1957 when the company introduced the first co-rotating, closely intermeshing ZSK twin screw extruder, marking a pivotal advancement in extrusion technology. ​ Coperion

In 2000, the Swiss industrial firm Georg Fischer consolidated its plant engineering division, incorporating its subsidiaries Waeschle and Buss, along with the recently acquired Werner & Pfleiderer, to form Coperion Holding GmbH. This strategic move created a comprehensive provider of systems and components for plastics processing. ​

Ownership changes occurred in subsequent years, with Georg Fischer divesting Coperion to British private equity firm Lyceum Capital between 2006 and 2007. In 2008, Coperion expanded by acquiring Hartmann Fördertechnik GmbH. By October 2012, the American industrial conglomerate Hillenbrand, Inc. acquired Coperion, integrating it into its portfolio. ​

A notable development took place in 2013 when Coperion merged with K-Tron, a specialist in feeding and pneumatic conveying equipment. This merger led to the creation of the Coperion K-Tron brand, enhancing the company’s capabilities in process equipment solutions. ​ Coperion

Today, Coperion stands as a global industrial and technological leader, offering compounding and extrusion systems, material handling equipment, and comprehensive services to industries such as plastics, chemicals, food, pharmaceuticals, and minerals. The company employs approximately 5,000 people across 50 locations worldwide, continuing its legacy of innovation and excellence in engineering.

#### Global Presence

Coperion operates in **17 countries across three continents**, with **50 locations worldwide**, including **10 production sites**. The company’s headquarters is in **Stuttgart, Germany**, which is a key location, but other major sites contribute significantly to its global operations.

Coperion’s machines are installed **worldwide**, with more than **15,000 extruders and compounding machines**, **10,000 bulk material systems**, and **20,000 feeders and pneumatic conveying systems** in operation. While exact details about countries without Coperion machines are not specified, the company’s global reach suggests its technology is present in most industrial regions.

Coperion also maintains **test centers across multiple countries**, providing customers with opportunities to trial processes and technologies. However, specific locations of these test centers are not listed publicly. With a strong international presence, Coperion continues to be a leader in compounding, extrusion, and material handling solutions.

#### People & Culture

Coperion employs approximately 5,000 individuals worldwide, with around 1,200 based in Germany. Herbold Meckesheim GmbH, a company specializing in recycling systems, has a workforce of about 220 employees. Their parent company, Hillenbrand Inc., headquartered in Batesville, Indiana, USA, has approximately 10,000 employees globally.

#### Products & Technologies

One of Coperion’s most renowned products is the ZSK twin screw extruder, celebrated for its efficiency and versatility in compounding and extrusion processes. This extruder is widely utilized across various industries, including plastics, chemicals, food, pharmaceuticals, minerals, and recycling. ​ Coperion

Coperion’s commitment to innovation has earned the company several accolades. Notably, the ZSK FilCo filtration compounder received the Sustainability Special Award from KUNSTSTOFF MAGAZIN in 2024. Additionally, the ZS-B MEGAfeed side feeder was honored with the Stuttgart Innovation Award 2023 in the “Sustainability and Social Affairs” category. Furthermore, Coperion, in collaboration with INTEC International, was recognized in the “100 Places of Industry 4.0 in Baden-Württemberg” competition for the development of the ServiceBox, highlighting the company’s advancements in intelligent networking of production processes.

#### Research & Innovation

At Coperion, customers can test materials and optimize processes in state-of-the-art **Test Centers** located worldwide. These facilities cater to various applications, including feeding, extrusion, material handling, and conveying. Process engineers assist in conducting tests with throughput rates ranging from a few kilograms per hour to medium production scales, ensuring that results can be effectively scaled up to full production levels.

Currently, Coperion’s research focuses on advancing **plastics recycling technologies** to support the circular economy. A significant initiative in this area is the **Recycling Innovation Center** in Niederbiegen near Weingarten, Germany. This ultramodern facility enables comprehensive testing of recycling processes, encompassing material handling, feeding, extrusion, compounding, pelletizing, post-processing, and deodorization. By collaborating with customers, Coperion aims to develop sustainable products and efficient recycling methods.

In terms of innovations, Coperion has developed several cutting-edge technologies. The **FLUIDLIFT ecodry®** is an energy-efficient flash drying process that reduces moisture in recycling grinds during material transportation, enhancing the overall efficiency of the recycling process. Additionally, Coperion has expanded its test lab capacities, exemplified by the **Recycling Innovation Center**, which underscores the company’s commitment to research and development, particularly in sustainability.

To support its research, innovation, and customer services, Coperion operates a global network of **50 locations across 17 countries on three continents**, with additional support from over **150 sales representatives**.

##### Key Locations

**Americas:**

* **United States:** Sewell (test center), Wytheville (manufacturing), Houston (sales office), Salina (Coperion K-Tron)
* **Brazil:** São Paulo (sales office)

**Europe:**

* **Germany:** Stuttgart (headquarters), Weingarten (manufacturing & test center), Malsch (Gabler Engineering), Meckesheim (Herbold Meckesheim)
* **Belgium:** Niel (Coperion N.V.)
* **Switzerland:** Niederlenz (Coperion K-Tron)

**Middle East:**

* **Saudi Arabia:** Al-Jubail (sales & service)

This strategic distribution of locations underscores Coperion’s commitment to delivering comprehensive support, cutting-edge innovations, and tailored solutions to customers worldwide.

#### Sustainability & Responsibility

Coperion is deeply committed to supporting its customers in processing recycled materials, advancing sustainable plastics solutions, and contributing to the reduction of microplastics.​

**Supporting Recycled Material Processing** In collaboration with Herbold Meckesheim, Coperion designs comprehensive recycling systems encompassing mechanical and chemical recycling processes. These systems handle various applications, including multi-layer film recycling, bottle-to-bottle recycling, and upcycling, ensuring that recycled plastics meet the quality standards of virgin materials. The integration of technologies such as shredding, washing, separating, drying, and agglomerating facilitates efficient recycling, promoting a circular economy. ​

**Advancements in Sustainable Plastics** Coperion actively engages in the development of sustainable plastics by offering complete systems for processing bio-based and biodegradable plastics. Utilizing renewable raw materials like starch, proteins, cellulose, lignin, fats, or oils from sources such as corn, sugarcane, and lumber, Coperion’s technologies aim to reduce carbon footprints and reliance on fossil fuels. The company’s expertise in compounding and extrusion systems ensures the production of high-quality bioplastics suitable for various applications. ​

**Contributing to Microplastics Reduction** While Coperion’s primary focus is on the processing and recycling of plastics, these efforts indirectly contribute to mitigating microplastics pollution. By enhancing the recycling process and promoting the use of sustainable materials, Coperion helps reduce plastic waste entering the environment, which is a significant source of microplastics. Additionally, the company’s involvement in developing biodegradable plastics offers potential solutions to address microplastics concerns. ​

Through these initiatives, Coperion demonstrates its dedication to sustainability and environmental responsibility, striving to create a future where plastics contribute positively to society without compromising ecological integrity.

#### Related Topics

* Industries served by integrated process and technology providers​
* Compounding and extrusion systems in manufacturing​
* Material handling solutions across various sectors
* ​Service offerings in industrial equipment maintenance​
* Sustainability initiatives in industrial operations​
* Core values and corporate culture in engineering firms​
* Global presence and regional operations of manufacturing companies​
* Technological advancements in process equipment​
* Customer-centric approaches in industrial services​
* Integration of digital solutions in manufacturing processes

#### Related Talks & Events

None

#### Keywords

* Integrated process solutions​
* Compounding and extrusion​
* Material handling systems​
* Industrial equipment services​
* Sustainability initiatives​
* Core values​
* Global operations​
* Customer focus​
* Digital manufacturing solutions​

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[Coperion.jpg]] Brochure: [[Coperion.pdf]]

# Test Centers

#### Tags

#Hall14 #Hall9 #Pavilion #GeneralTopics

#### Description

Coperion provides test centers for various applications, such as feeding and extrusion, product handling and conveying, as well as many further processes. Tests with throughput rates of a few kg/h up to a medium production scale can be carried out and optimized in our test centers. Using proven scale-up methods, our experts transfer the test results to production scale.

Coperion’s test centers are the ideal platform for advanced testing of any challenge in a production plant, such as product behavior, new formulations and throughput rates. Depending on the process task, the latest Coperion developments are integrated into the test setup.

Tests in our test centers support the determination of the ideal equipment configuration for an application as well as the development of first-class designs for processing systems under realistic production conditions, while also further enhancing our existing technology through internal testing.

Some of our test centers also feature laboratories, where our engineers have access to numerous analysis options to evaluate product quality and characteristics.

#### Test Centers for different Applications

* Plastics Applications
* Recycling Applications
* Chemical Applications
* Battery Production
* Food | Pet Food
* Pharma Applications
* Minerals Applications

#### Recycling Innovation Center

In this high-tech test center for plastics recycling applications, every recycling process step – from material handling and feeding to extrusion, compounding, pelletizing, material postprocessing and deodorization – can be tested.

Extensively equipped recycling systems are available that can be modified in myriad ways, depending upon the specific requirements of the recyclate to be produced.

#### Test Labs for Feeding & Conveying

We conduct tests with process materials to answer critical process questions and determine the best configuration of the feeding or conveying equipment.

We have developed a vast body of expertise and a wide range of feeding and conveying technology options to address the multitude of challenges that can arise for process operations.

#### Food Test Centers

We focus on the specific requirements of your food applications. We provide test labs for feeding and extrusion applications, food components and conveying systems.

These test labs are the ideal platform for advanced testing of any challenge in a production plant, such as product behavior, new formulations, throughput rates or food safety standards.

#### Related Topics

* Testing and optimization of compounding and extrusion processes​
* Material handling and conveying system trials​
* Feeding equipment performance evaluation​
* Process development for plastics applications​
* Recycling process testing and innovation​
* Chemical processing trials​
* Battery production process assessments​
* Food and pet food processing evaluations​
* Pharmaceutical and nutraceutical process testing​
* Scale-up methodologies from lab to production

#### Related Talks & Events

None

#### Keywords

* Coperion Test Centers​
* Compounding and extrusion testing​
* Material handling trials​
* Feeding equipment evaluation​
* ZSK twin screw extruders​
* Devolatilization​
* Feed Enhancement Technology (FET)​
* Bulk solids handling​
* Pelletizing systems​
* Process optimization​
* Recycling Innovation Center​
* Battery materials processing​
* Food extrusion applications​
* Pharmaceutical process validation​
* Dense phase conveying​
* Dilute phase conveying​
* Loss-in-weight feeders​
* Weigh belt feeders​
* Micro-ingredient feeders​
* Process scale-up

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[Test-Centers.jpg]] Brochure: [[Test-Centers.pdf]]

# +++Complete Systems+++

#### Tags

#Hall14 #Pavilion #Hall9 #PlantsSystems

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Eco Blue – Dew Tector+++

#### Tags

#Hall14 #PlantsSystems

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Material Handling Competence+++

#### Tags

#Hall14 #PlantsSystems

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Project Management+++

#### Tags

#Hall14 #Pavilion #Hall9 #PlantsSystems

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++System Competence+++

#### Tags

#Hall14 #Pavilion #Hall9 #PlantsSystems

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Agglomeration+++

#### Tags

#Pavilion #Hall9 #PlasticsRecycling

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Agricultural Film+++

#### Tags

#Pavilion #Hall9 #PlasticsRecycling

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Complete Systems+++

#### Tags

#Pavilion #Hall9 #PlasticsRecycling

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Granulators+++

#### Tags

#Pavilion #Hall9 #PlasticsRecycling

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Herbold Portfolio+++

#### Tags

#Pavilion #Hall9 #PlasticsRecycling

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Mechanical Recycling+++

#### Tags

#Hall14 #Pavilion #Hall9 #PlasticsRecycling

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++PET bottle-to-bottle Recycling+++

#### Tags

#Pavilion #Hall9 #PlasticsRecycling

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Packaging Film+++

#### Tags

#Pavilion #Hall9 #PlasticsRecycling

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Size Reduction+++

#### Tags

#Pavilion #Hall9 #PlasticsRecycling

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# +++Wash Lines+++

#### Tags

#Pavilion #Hall9 #PlasticsRecycling

#### Description

#### Process

#### Product Range

#### Related Topics

#### Related Talks & Events

#### Keywords

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: Dateipfad Brochure: Dateipfad

# Chemical Recycling

#### Tags

#Hall14 #Pavilion #Hall9 #PlasticsRecycling

#### Description

Plastic waste, especially packaging waste, is generally a mixture of materials with a high degree of contamination. Recycling this raw material is usually difficult, as sorting and cleaning of waste is in many cases neither economically viable nor technically feasible. Chemical recycling is a promising process to recycle these material streams into chemicals, waxes or liquid energy carriers.

Coperion provides first-class technologies for the chemical recycling of post-consumer waste. Coperion K-Tron feeders ensure high-accuracy feeding of raw materials into the extruder. Coperion’s ZSK twin screw extruders possess numerous advantages that are especially beneficial for an energy efficient chemical recycling process.

#### Process

Chemical recycling is a promising process for recycling mixed plastic waste, both technically and economically.

After post-consumer waste, either shredded or compacted, is reliably added to the extruder’s process section by a high-accuracy Coperion K-Tron feeder, a great deal of mechanical energy is introduced into the material in shortest time thanks to the continuous surface renewal as well as intensive dispersion and shearing along the twin screws.

Within about 30 seconds, a homogeneous, highly devolatilized melt with a temperature of up to 350°C is produced, into which the energy has been introduced very efficiently.

Further materials, such as catalysts, can be added and mixed in as needed. In some cases, residual water or chlorides from PVC are introduced into the extruder in minute quantities along with the plastic waste. Both are reliably extracted via vacuum devolatilization on the extruder’s process section.

Within the reactor, the melt, which was previously heated to up to 350°C in the twin screw extruder, is further heated. At up to 500°C pyrolysis of the polymers takes place, the splitting of polymer chains into shorter units in an oxygen-free environment. The pyrolysis of polymers utilizes the random scission mechanism, where free radicals are generated. At the same time, chain reactions are initiated which lead to cracking polymers into a broad mixture of hydrocarbons in liquid and gaseous phase. The most important factors for driving this process are residence time, temperature, and the type of pyrolysis agent.

Most of the inorganic components of the post-consumer waste remain in the reactor’s sump and are removed. The polymers’ organic hydrocarbons evaporate. They are transformed into monomers, petrochemical raw materials, or synthesis gases and then processed further in a destillator into marketable products such as oil, heavy fuel, or waxes.

#### Product Range

* **ZSK Twin Screw Extruders:** Coperion’s twin screw extruder technology is particularly well suited for an efficient energy addition and therefore for chemical recycling of plastics. Twin screw extruders possess numerous advantages that are especially beneficial in chemical recycling. The technology covers a broad range of throughputs. On larger ZSK extrusion machines, throughputs of up to 20 t/h can be realized. Polymers of various viscosities are reliably plastified thanks to the highly effective mode of operation of the twin screws. Plastic energy dissipation takes place in no time. When needed, corrosion and wear protection of all product-contact parts within the process section can assure long extruder lifetime even when processing very aggressive materials.
* **ZSK Mc¹⁸ Twin Screw Extruders**
* **ZS-B MEGAfeed Side Feeder:** Support your sustainability initiatives by minimizing energy consumption and reducing your carbon footprint. Our solution helps you achieve your concrete energy efficiency targets and comply with environmental regulations.
* **Feeding Equipment:** Coperion K-Tron feeders secure high-accuracy feeding of raw ingredients into the extrusion process. The wide range of products available includes twin screw feeders, single screw feeders, bulk solids pumps, vibratory feeders as well as other types in a variety of sizes and configurations. Coperion K-Tron feeders ensure a continuous, uniform infeed with a very tight short-term accuracy and repeatability.
* **Volumetric and Gravimetric Feeders**
* **Service:** From single spare parts to total services, Coperion and Coperion K-Tron provide comprehensive maintenance and modernization of plastic recycling systems.

#### Related Topics

* Chemical recycling of mixed plastic waste
* Pyrolysis processes in plastic recycling
* Energy-efficient reactor loading techniques
* Integration of extrusion technology in chemical recycling
* Handling of post-consumer plastic waste

#### Related Talks & Events

None

#### Keywords

* ZSK twin screw extruder
* Coperion K-Tron feeders
* High-accuracy feeding
* Mechanical energy input
* Homogeneous melt production
* Devolatilization
* Reactor loading
* Pyrolysis temperature control
* Catalyst addition
* Continuous process optimization
* Throughput rates up to 20 t/h
* Corrosion and wear protection
* Post-consumer waste recycling
* Homogenization
* Vacuum devolatilization
* Melt temperature up to 350°C
* Agglomerated plastic waste
* Process section design
* Energy-efficient extrusion
* Plastic waste contamination handling

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[Chemical-Recycling.jpg]] Brochure: [[ChemicalRecycling.pdf]]

# Deodorization

#### Tags

#Pavilion #Hall9 #PlasticsRecycling

#### Description

The demand for plastic recyclates from post-consumer waste is growing. However, unpleasant odors are often a challenge. Removing them is a prerequisite if plastic recyclates from post-consumer waste are to be used for the manufacture of new products.

The recyclate must meet high standards not only mechanically, but also in terms of sensory properties. However, plastic recyclate from post-consumer waste frequently exhibits unpleasant odors.

Coperion and Herbold Meckesheim offer a variety of solutions all along the recycling process to remove unpleasant odors from plastic. These technologies excel due to their especially reliable and energy-efficient operation.

#### Advantages

* Versatile scope of application for recyclate and highest product quality
* Highly efficient Coperion and Herbold Meckesheim solutions with maximum throughputs and reliability
* Optimal solution for your application, taking investment and operating costs into account
* Low maintenance and operating costs
* Test Centers for recycling applications and mobile deodorization unit for tests at your location

#### Process

**Mechanical Pretreatment I Silo Degassing** In a first step, odors are eliminated as the waste plastic undergoes mechanical pretreatment during shredding, washing and drying. Further odors can be removed from the shredded plastic in a silo using fresh air circulation.

**Devolatilization in the ZSK Recycling Extruder** The next, intensive devolatilization step, which markedly improves the recompound’s sensory quality, takes place during compounding in a ZSK twin screw extruder.

Following melting and intensive homogenization of the waste plastic in the ZSK extruder’s process section, volatile particles are degassed from the plastic melt in a highly energy efficient process. Using various technologies such vacuum devolatilizations, these dissolved gases are reliably removed from the product. This effect can be significantly intensified with the addition of liquid stripping agents.

Use of a ZS-EG side devolatilization unit provides a particularly effective and stable degassing process in the ZSK twin screw extruder, maximizing its deodorizing capabilities when high quantities of gas are present.

**Degassing recycled plastic compounds** Coperion also offers post extrusion and pelletizing deodorization systems that play a further key role in improving waste plastic to the qualitative level of new plastic. They reliably remove any residual unpleasant odors from recycled plastic compounds. Hot air flows through the pellets in silos, diffusing even particularly stubborn, long-chain molecules from the compounds. For this step, Coperion has developed two different process solutions, depending upon the desired end product quality, the temperature it requires, residence time and quantity of air.

One method uses two silos – one to warm and deodorize the granulate and another to cool the granulate with cold air. In this process, comparatively little energy is needed to warm the product to the desired devolatilization temperature. Moreover, the cooler’s process heat can be used to pre-warm the pellets, increasing energy efficiency.

Alternatively, warming, degassing and cooling can take place in one silo by using two Bulk-X-Change heat exchangers. This solution is much more compact, requiring only one silo.

#### Product Range

* **ZSK Recycling Extruders and Side Degassing Unit ZS-EG:** Coperion’s ZSK Recycling Extruders are suitable for intensive devolatilization of the melt. Volatile substances in small or large quantities can be reliably removed. In some cases the devolatilization performance capability with conventional top vent extruder barrels can be limited. In this case the ZS-EG twin screw side devolatilization unit provides the solution.
* **ZSK Mc¹⁸ Extruders** **ZS-EG Side Devolatilization Unit**
* **Silo Degassing:** Coperion offers different solutions for deodorization along the plastics recycling process. Odors can be removed from shredded plastic in a silo using fresh air circulation. In addition Coperion offers post extrusion and pelletizing deodorization systems that play a further key role in improving waste plastic to the qualitative level of new plastic.
* **Plants & Systems**
* **Global Service:** Our service structure consists of over 350 service engineers and technicians around the globe who not only look after your machines and systems but also after your business. They see themselves as partners who secure your future.

#### Related Topics

* Odor removal techniques in plastics recycling​
* Devolatilization processes for recycled plastics​
* Mechanical pretreatment methods for odor reduction​
* Post-extrusion deodorization systems​
* Use of stripping agents in degassing​
* Integration of washing and drying in odor removal​
* Energy-efficient deodorization technologies​
* Testing and analysis of odor reduction

#### Related Talks & Events

None

#### Keywords

* ZS-EG twin screw side degassing unit​
* ZSK twin screw extruder​
* Devolatilization​
* Vacuum degassing
* ​Liquid stripping agents​
* Silo degassing with fresh air circulation​
* Post-extrusion pellet deodorization​
* Bulk-X-Change heat exchanger​
* Mobile deodorization test unit​
* Odor reduction in post-consumer recyclate​
* Energy-efficient odor removal​
* Process optimization for deodorization​
* Testing deodorization potential on-site​
* Integration of shredding, washing, and drying​
* Use of hot air in pellet deodorization​
* Degassing domes in extruders​
* Atmospheric vents for odor removal​
* Continuous devolatilization systems​
* Temperature control in deodorization​
* Gas volume management in odor reduction

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[Deodorization.jpg]] Brochure: [[Deodorization.pdf]]

# PET-Recycling

#### Tags

#Pavilion #Hall9 #PlasticsRecycling

#### Description

Polyethylene terephthalate (PET) is a high-value material that is on course to take over a key function in the plastics industry’s path toward a circular economy. PET plays an ever more important role in recycling, due to the large volume of packaging materials in use today. PET posses extremely good properties for reprocessing. Its continuously expanding use in single- and reusable bottles, as well as its recovery via deposit systems, add to its value. Correspondingly, it can be lucrative for companies to focus on PET recycling.

Before PET can be reprocessed, it must first be shredded to flakes and then cleaned. Ordinary technologies require pre-drying and crystallization of the PET flakes following washing. However, using the specialized technology from Coperion, the shredded PET can be fed directly into the ZSK twin screw extruder and compounded.

Thanks to the highly efficient plastification within the ZSK extruder, Coperion systems for PET recycling achieve throughput rates up to 8 tons per hour, therefore recycling companies profit from very high product quality, operating and energy cost savings, and reduced logistic expense in comparison to conventional PET recycling methods.

#### Process

The shredded flakes are reliably fed into the ZSK extruder using highly accurate SWB (Smart Weigh Belt) feeders or gravimetric feeders from Coperion K-Tron. In addition, other regrind materials, new materials, or mixtures can be added. Melting, intensive devolatilization, and complete homogenization take place in the ZSK process section before the melt is transferred to the next process step for production of films, fibers, or bottles.

With direct processing of PET, recyclers profit particularly from the very high end product quality. Product handling is very gentle. The residence time in the ZSK extruder is very short and dispersion is very good. The ZSK extruders’ high torque enables processing at low temperatures and with almost no viscosity loss. ZSK extruders’ self-cleaning enables rapid recipe and color changes. Thanks to the ZSK twin screw extruder’s very good devolatilization options, volatile components such as monomers, oligomers, and water are reliably removed and channeled away from the exhaust flow in suitable separators before discharging the process section.

Alongside the high product quality, direct processing of PET flakes offers further advantages including reduced operating costs and energy consumption as well as lower logistic expense.

#### Advantages

* Highest thoughput rates
* Energy and time savings as pre-drying and crystallization are omitted
* Very high quality of the end product because only a minimum iV degradation occurs during processing and the crystal clear material does not become yellowish
* High flexibility because recipes and colors can be changed very quickly due to the good self-cleaning behavior of the ZSK twin screw extruder
* Much simpler logistics because pelletized new product and different regenerates (ground product, agglomerates, flakes) can be processed together even if they have different iV value

#### Product Range

* **Twin Screw Extruders:** Coperion’s ZSK twin scew extruders are particularly suitable for the PET recycling processes due to the excellent homogenization and devolatilization properties. The ZSK twin screw extruder can process the PET while being essentially non-dried, and devolatilize the melt with a low energy expenditure.
* **ZSK Mc¹⁸ Twin Screw Extruders**
* **ZS-B MEGAfeed Side Feeder:** When recycling PET, the feeding rate is no longer a limiting factor. With the ZS-B MEGAfeed PET flakes and fibers can be fed into the ZSK twin screw extruder in large quantities, and processed there. Existing Coperion PET recycling lines can be retrofitted with the ZS-B MEGAfeed technology.
* **Feeding Equipment:** Coperion K-Tron offers a variety of feeding solutions for plastics processing. Each technology has its own advantages – what is decisive is the process know-how that brings operational requirements and processes together. Smart Weigh Belt Feeders can reliably feed large volumes of bulk material and materials with varying flow properties, since they weigh the bulk material prior to discharge and actively adapt belt speed. Vibratory Feeders are an ideal solution where smaller recyclates or flakes are being fed, or if glass fiber is added into compounding processes. Twin Screw Feeders are ideal for the precise feeding of finer bulk materials, and are therefore often used for additives.
* **Smart Weigh Belt Feeders** **Vibratory Feeders** **Twin Screw Feeders**
* **Material Handling:** Coperion and Coperion K-Tron offer an extensive line of pneumatic conveying systems and components for the transfer of a wide range of bulk materials, such as additive powders, resin pellets, recyclates, stabilizers and colors. Our experienced global team can support you in designing, replacing, or modernizing the material handling system for your process line, taking the guesswork out of the process.
* **Rotary Valves** **Vacuum Receivers** **Hoppers & Bin**
* **Service:** We provide standardized and highly customized service packages for our machines and equipment. Our comprehensive range of services secures maximum plant reliability and lifetime.

#### Related Topics

* PET recycling processes​
* Bottle-to-bottle recycling​
* Bottle-to-fiber recycling​
* Mechanical pretreatment in PET recycling​
* Solid State Polycondensation (SSP) in PET recycling​
* FDA and EFSA compliance in recycled PET​
* Energy efficiency in PET recycling​
* Integration of washing and extrusion systems​
* Handling of post-consumer PET waste​
* Circular economy in plastics

#### Related Talks & Events

None

#### Keywords

* ZSK twin screw extruder​
* Herbold Meckesheim washing systems​
* Coperion K-Tron feeders​
* Devolatilization​
* Intrinsic Viscosity (IV) maintenance​
* FDA Letter of Non-Objection​
* Smart Weigh Belt (SWB) feeders​
* Gravimetric feeding​
* Pelletizing​
* Vacuum operation in extrusion​
* Energy-efficient PET processing​
* High-throughput PET recycling​
* Post-consumer PET flakes​
* Direct processing of PET flakes​
* Bottle-grade PET recyclate​
* Recycling system integration​
* Process automation in PET recycling​
* Quality assurance in recycled PET​
* Material handling in PET recycling​
* Sustainable PET packaging solutions

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[PET-Recycling.jpg]] Brochure: [[PET-Recycling.pdf]]

# Recycling

#### Tags

#Pavilion #Hall9 #Hall14 #PlasticsRecycling

#### Description

**Coperion and Herbold Meckesheim** Our technologies play a key role in the global manufacture of high-quality plastic recyclates. We unite decades of expertise and comprehensive process know-how in a variety of plastics recycling applications.

#### Coperion and Herbold

**Perfect Match** The competencies of Coperion and Herbold Meckesheim complement each other perfectly. Coperion is the technology leader for extrusion and compounding, bulk material systems and feeding. Herbold Meckesheim is specialized in the mechanical recycling of plastics and plastic waste.

#### Applications

**Plastic Recycling Technology For Various Applications** Coperion and Herbold Meckesheim design complete recycling systems for a wide range of applications, from mechanical recycling to chemical recycling, from multi-layer film recycling, bottle-to-bottle recycling to upcycling and odor reduction.

We ensure the smooth interaction of all process steps which include shredding, washing, separating, drying and agglomerating plastics, material handling, feeding, twin screw extrusion, pellet treatment (cooling, drying, homogenization) and finished product handling. Our plants provide maximum productivity and efficiency.

#### Solutions

* **Chemical Plastic Recycling:** Chemical recycling is a promising process to recycle mixed plastic waste into chemicals, waxes or liquid energy carriers.
* **Multi-Layer Film Recycling:** Coperion offers a closed-loop solution in which up to 100% of multi-layer film production waste can be re-processed into the production process.
* **PET-Recycling:** PET plays an ever more important role in recycling. Using Coperion’s innovative technology PET flakes can be processed into bottles, films or fibers again.
* **Bottle-to-Fiber Recycling:** Thanks to excellent degassing properties, ZSK twin screw extruders are ideal for producing fibers from PET flakes.
* **Plastic Upcycling:** With Coperion’s upcycling solutions recyclates are optimized in their properties to such an extent that they achieve a quality equivalent to that of primary material.
* **Odor Reduction:** Removing unpleasant odors is a prerequisite if plastic recyclates from post-consumer waste are to be used for the manufacture of new products.

#### Related Topics

* Mechanical recycling of plastics​
* Chemical recycling processes​
* Upcycling of plastic waste​
* Deodorization techniques in plastics recycling​
* Bottle-to-bottle PET recycling​
* Bottle-to-fiber PET recycling​
* Integration of shredding, washing, and drying in recycling systems​
* Circular economy initiatives in plastics industry​
* Energy-efficient recycling technologies​
* Compliance with FDA and EFSA standards in recycled materials​

#### Related Talks & Events

None

#### Keywords

* ZSK twin screw extruder​
* Coperion K-Tron feeders​
* Herbold Meckesheim granulators​
* Devolatilization​
* Solid State Polycondensation (SSP)​
* Intrinsic Viscosity (IV) maintenance​
* Smart Weigh Belt (SWB) feeders​
* Gravimetric feeding​
* Pelletizing​
* Vacuum operation in extrusion​
* Odor reduction in recycled plastics​
* Post-consumer waste processing​
* Mechanical pretreatment​
* Recycling system integration​
* Process automation in recycling​
* Quality assurance in recycled materials​
* Material handling in recycling processes​
* Sustainable packaging solutions​
* Energy consumption tracking in recycling​
* User-friendly interfaces for recycling systems

#### Resources

3D-Model: Dateipfad Video: Dateipfad Image: [[Recycling.svg]] Brochure: [[Recycling.pdf]]

1. Unternehmen Coperion Coperion ist ein global führender Anbieter von Maschinen und Systemen zur Verarbeitung von Kunststoffen, Chemikalien, Nahrungsmitteln und anderen Schüttgütern. Das Unternehmen mit Hauptsitz in Stuttgart, Deutschland, bietet eine breite Palette an Lösungen, die auf die Extrusion, Dosierung, Förderung und das Mischen von Materialien spezialisiert sind. Coperion setzt auf innovative Technologien, um die Produktionsprozesse seiner Kunden zu optimieren und die Effizienz zu steigern. Coperion – Hauptprodukte und Dienstleistungen: • Doppelschneckenextruder • Dosier- und Wiegesysteme • Fördertechnik für Schüttgüter • Mischen und Compoundieren von Kunststoffmaterialien • Innovative Systemlösungen für die Kunststoff-, Chemie-, Pharma- und Lebensmittelindustrie Coperion ist bekannt für seine hohe Expertise in der Herstellung von Doppelschneckenextrudern, die in einer Vielzahl von industriellen Anwendungen eingesetzt werden, einschließlich der Kunststoffverarbeitung, der Herstellung von Masterbatches, der Herstellung von Polymerblends und mehr.
2. Maschinen und Anlagen A. Doppelschneckenextruder (ZSK-Serie) Die ZSK-Serie von Coperion ist eine der bekanntesten und leistungsstärksten Produktlinien für die Kunststoffverarbeitung. Diese Maschinen sind ideal für die Extrusion von Kunststoffen und die Herstellung von Compounds, da sie die nötige Vielseitigkeit und Effizienz bieten. B. K-Tron Dosiersysteme K-Tron ist Coperions Marke für präzise Dosierungssysteme, die in verschiedenen Industrieprozessen eingesetzt werden. Sie ermöglichen eine exakte Zufuhr von Materialien in eine Produktionslinie und tragen so zur Optimierung der Produktionsprozesse bei. C. Fördertechnik und Pneumatische Fördersysteme Die Fördertechnologie von Coperion ist für den sicheren und effizienten Transport von Schüttgütern in verschiedenen Industrieprozessen verantwortlich. Pneumatische Fördersysteme sorgen dafür, dass Materialien sicher und ohne Verlust transportiert werden. D. Mischsysteme und Compoundierverfahren Coperion bietet fortschrittliche Mischtechnologien, die auf hohem Durchsatz und präziser Materialzusammensetzung beruhen. Diese Mischsysteme sind sowohl für die Kunststoffverarbeitung als auch für Anwendungen in der Chemie und Pharmaindustrie geeignet.
3. Technologien und Innovationen Coperion setzt auf eine Reihe von fortschrittlichen Technologien und innovativen Verfahren, die es ermöglichen, die Qualität und Effizienz von Produktionsprozessen zu steigern. A. ZSK-Technologie Die ZSK-Doppelschneckenextruder bieten einen der innovativsten Prozesse für das Compoundieren von Kunststoffen. Mit verschiedenen Modellen wie der ZSK Mc18, ZSK Mc28 und ZSK Mc46 wird eine präzise Kontrolle der Mischparameter sowie der Materialdurchsatz sichergestellt. Diese Maschinen sind besonders für Anwendungen geeignet, die eine hohe Qualität und eine gleichmäßige Mischung von Materialien erfordern. B. Smart-Systemlösungen Coperion bietet auch intelligente Steuerungssysteme, die mit Sensoren und Fernüberwachungsfunktionen ausgestattet sind. Diese Systeme ermöglichen eine Echtzeitüberwachung und -steuerung von Maschinen und Produktionslinien, was zur Prozessoptimierung und Energieeinsparung beiträgt. C. Effiziente Energieverwendung Ein weiteres Merkmal der Maschinen von Coperion ist die Energieeffizienz. Durch den Einsatz von modernen Motoren, innovativen Steuerungen und optimierten Produktionsprozessen wird der Energieverbrauch in der Produktion minimiert, was zu einer signifikanten Kostenreduktion führt.
4. Branchen und Anwendungen Coperion ist in verschiedenen Industrien tätig und stellt maßgeschneiderte Lösungen für spezifische Branchenbedürfnisse zur Verfügung. Zu den wichtigsten Branchen, die Coperion bedient, gehören: • Kunststoffverarbeitung: Coperion bietet Maschinen und Systeme für die Herstellung von Kunststoffgranulaten, die Compoundierung von Kunststoffen und die Extrusion von Polymeren. • Chemieindustrie: Hier liefert Coperion Systeme für die Herstellung von Chemikalien und anderen spezialisierten Stoffen, die eine präzise Dosierung und Mischgenauigkeit erfordern. • Pharmaindustrie: Coperion bietet Maschinen für den präzisen Umgang mit Pharmaprodukten und die Herstellung von Pharma-Masterbatches. • Lebensmittelindustrie: Maschinen und Systeme für die Verarbeitung von Lebensmitteln, die eine hygienische Produktion und eine präzise Dosierung von Zutaten sicherstellen.
5. Service und Support Coperion bietet einen umfassenden Service, der Installation, Wartung und Optimierung umfasst. Der Servicebereich ist darauf ausgelegt, sicherzustellen, dass alle Maschinen effizient und ohne Unterbrechung laufen. Dies umfasst unter anderem: • Installation und Inbetriebnahme: Coperion stellt sicher, dass alle Maschinen ordnungsgemäß installiert und konfiguriert werden. • Wartungsprogramme: Mit maßgeschneiderten Wartungsplänen sorgt Coperion für eine langfristige Betriebsbereitschaft der Maschinen. • Ersatzteile und Reparatur: Das Unternehmen bietet einen schnellen und zuverlässigen Zugang zu Ersatzteilen und Reparaturdiensten, um Ausfallzeiten zu minimieren.
6. Doppelschneckenextruder von Coperion Coperion ist bekannt für seine Doppelschneckenextruder der Serie ZSK, die in verschiedenen Modellvarianten erhältlich sind. Diese Maschinen sind das Herzstück für die Extrusion von Kunststoffen und Compoundierprozessen. A. ZSK Mc18 • Verwendungsbereich: Ideal für die Verarbeitung von Kunststoffen, Additiven und Kunststoffmischungen. • Leistung: 18 mm Schneckendurchmesser, für mittlere Produktionsmengen. • Vorteile: • Komplette Prozesskontrolle: Durch die innovative Steuerungstechnologie können Temperatur, Druck und Materialfluss exakt kontrolliert werden. • Energieeffizient: Durch die kontinuierliche Optimierung des Energieverbrauchs können Betriebe ihre Betriebskosten signifikant senken. B. ZSK Mc28 • Verwendungsbereich: Häufig eingesetzt für die Herstellung von Masterbatches, Compounds und Polymerblends. • Leistung: 28 mm Schneckendurchmesser, mittlere Produktionskapazität. • Vorteile: • Hochwertige Mischleistung für hohe Qualitätsanforderungen. • Vielseitigkeit: Kann mit unterschiedlichen Materialkombinationen arbeiten. C. ZSK Mc46 • Verwendungsbereich: Für hochkomplexe Polymerverarbeitungen und Anwendungen, die eine hohe Präzision in der Verarbeitung erfordern (z.B. Recycling von Kunststoffabfällen). • Leistung: 46 mm Schneckendurchmesser, für große Produktionsmengen. • Vorteile: • Hohe Leistungsdichte und kontinuierliche Mischleistung. • Prozesssicherheit bei der Verarbeitung von verschiedenen Materialien wie Rezyklaten oder hochviskosen Stoffen. D. ZSK Maxx • Verwendungsbereich: Ein Top-Modell für die anspruchsvollsten Anwendungen in der Kunststoff- und Chemieindustrie, wie z.B. die Verarbeitung von hochviskosen und thermisch instabilen Materialien. • Leistung: Sehr hohe Kapazität, geeignet für großvolumige Produktionen. • Vorteile: • Optimierte Schnecken-Geometrien für maximale Mischqualität. • Extrem energieeffizient, um große Produktionsmengen mit niedrigen Betriebskosten zu erzeugen. • Digitale Steuerungssysteme für eine hohe Prozessgenauigkeit.
7. K-Tron Dosiersysteme Coperion bietet auch eine Reihe von hochentwickelten Dosiersystemen für präzises Mischen und Dosieren von Materialien. Diese Systeme sind speziell für Anwendungen in der Kunststoffverarbeitung, Lebensmittelindustrie und Pharmaindustrie entwickelt. A. K-Tron P-Series • Verwendungsbereich: Entwickelt für die präzise Dosierung von Pulver und Granulaten in kontinuierlichen Prozessen. • Besondere Merkmale: • Wiege- und Fördertechnologie: Erlaubt die genaue Dosierung von Schüttgütern bei variierenden Fließraten. • Präzision: Exakte Gewichtskontrollen, auch bei sehr feinen Pulvern. • Einsatz: Ideal für die Pharma- und Lebensmittelindustrie, um die Qualität und Konsistenz der Produkte zu sichern. B. K-Tron PF Series • Verwendungsbereich: Für die kontinuierliche Dosierung von hochmodifizierten Materialien wie Flüssigkeiten oder pulverisierten Feststoffen. • Besondere Merkmale: • Vakuumförderung für den sicheren und effizienten Transport von Materialien. • Modulare Bauweise, die sich an unterschiedliche Produktionsanforderungen anpasst. • Wartungsfreundlich: Schnell und einfach zu reinigen und zu warten. C. K-Tron Smart Weigh Belt Feeder (SWB) • Verwendungsbereich: Dieser Bandförderer wird für das präzise Dosieren von Pulvern und Granulaten über längere Distanzen eingesetzt. • Besondere Merkmale: • Intelligente Steuerung: Die SWB-Serie ermöglicht Fernüberwachung und -steuerung für eine noch genauere Dosierung. • Energieeffizienz: Verbessert den Produktionsfluss bei gleichzeitig reduzierten Energieanforderungen. • Industrieanwendungen: Einsatz in der chemischen Industrie sowie Verpackungsindustrie.
8. Fördertechnik und Pneumatische Fördersysteme A. Coperion K-Tron Pneumatic Conveying Systems • Verwendungsbereich: Diese Förderanlagen sind auf die Förderung von Schüttgütern über Rohrsysteme mit Luftdruck spezialisiert. • Besondere Merkmale: • Sichere Materialhandhabung: Die Systeme sind so konzipiert, dass sie empfindliche Materialien ohne Beschädigung oder Verunreinigung transportieren. • Modularer Aufbau: Kann an verschiedene Produktionsprozesse angepasst werden. • Vielseitig: Ideal für den Einsatz in der Lebensmittel-, Pharma- und Chemieindustrie. B. K-Tron Smart Conveying Systems • Verwendungsbereich: Entwickelt für die intelligente Steuerung von Fördersystemen in einer Industrie 4.0-Umgebung. • Besondere Merkmale: • Integration von IoT-Funktionen für eine Echtzeitüberwachung und Prozessoptimierung. • Energieeffizienz: Optimiert den Luftstrom, um den Energieverbrauch zu minimieren. • Einfache Integration in bestehende Produktionslinien.
9. Doppelschneckenextruder von Coperion Coperion ist bekannt für seine Doppelschneckenextruder der Serie ZSK, die in verschiedenen Modellvarianten erhältlich sind. Diese Maschinen sind das Herzstück für die Extrusion von Kunststoffen und Compoundierprozessen. A. ZSK Mc18 • Verwendungsbereich: Ideal für die Verarbeitung von Kunststoffen, Additiven und Kunststoffmischungen. • Leistung: 18 mm Schneckendurchmesser, für mittlere Produktionsmengen. • Vorteile: • Komplette Prozesskontrolle: Durch die innovative Steuerungstechnologie können Temperatur, Druck und Materialfluss exakt kontrolliert werden. • Energieeffizient: Durch die kontinuierliche Optimierung des Energieverbrauchs können Betriebe ihre Betriebskosten signifikant senken. B. ZSK Mc28 • Verwendungsbereich: Häufig eingesetzt für die Herstellung von Masterbatches, Compounds und Polymerblends. • Leistung: 28 mm Schneckendurchmesser, mittlere Produktionskapazität. • Vorteile: • Hochwertige Mischleistung für hohe Qualitätsanforderungen. • Vielseitigkeit: Kann mit unterschiedlichen Materialkombinationen arbeiten. C. ZSK Mc46 • Verwendungsbereich: Für hochkomplexe Polymerverarbeitungen und Anwendungen, die eine hohe Präzision in der Verarbeitung erfordern (z.B. Recycling von Kunststoffabfällen). • Leistung: 46 mm Schneckendurchmesser, für große Produktionsmengen. • Vorteile: • Hohe Leistungsdichte und kontinuierliche Mischleistung. • Prozesssicherheit bei der Verarbeitung von verschiedenen Materialien wie Rezyklaten oder hochviskosen Stoffen. D. ZSK Maxx • Verwendungsbereich: Ein Top-Modell für die anspruchsvollsten Anwendungen in der Kunststoff- und Chemieindustrie, wie z.B. die Verarbeitung von hochviskosen und thermisch instabilen Materialien. • Leistung: Sehr hohe Kapazität, geeignet für großvolumige Produktionen. • Vorteile: • Optimierte Schnecken-Geometrien für maximale Mischqualität. • Extrem energieeffizient, um große Produktionsmengen mit niedrigen Betriebskosten zu erzeugen. • Digitale Steuerungssysteme für eine hohe Prozessgenauigkeit.
10. K-Tron Dosiersysteme Coperion bietet auch eine Reihe von hochentwickelten Dosiersystemen für präzises Mischen und Dosieren von Materialien. Diese Systeme sind speziell für Anwendungen in der Kunststoffverarbeitung, Lebensmittelindustrie und Pharmaindustrie entwickelt. A. K-Tron P-Series • Verwendungsbereich: Entwickelt für die präzise Dosierung von Pulver und Granulaten in kontinuierlichen Prozessen. • Besondere Merkmale: • Wiege- und Fördertechnologie: Erlaubt die genaue Dosierung von Schüttgütern bei variierenden Fließraten. • Präzision: Exakte Gewichtskontrollen, auch bei sehr feinen Pulvern. • Einsatz: Ideal für die Pharma- und Lebensmittelindustrie, um die Qualität und Konsistenz der Produkte zu sichern. B. K-Tron PF Series • Verwendungsbereich: Für die kontinuierliche Dosierung von hochmodifizierten Materialien wie Flüssigkeiten oder pulverisierten Feststoffen. • Besondere Merkmale: • Vakuumförderung für den sicheren und effizienten Transport von Materialien. • Modulare Bauweise, die sich an unterschiedliche Produktionsanforderungen anpasst. • Wartungsfreundlich: Schnell und einfach zu reinigen und zu warten. C. K-Tron Smart Weigh Belt Feeder (SWB) • Verwendungsbereich: Dieser Bandförderer wird für das präzise Dosieren von Pulvern und Granulaten über längere Distanzen eingesetzt. • Besondere Merkmale: • Intelligente Steuerung: Die SWB-Serie ermöglicht Fernüberwachung und -steuerung für eine noch genauere Dosierung. • Energieeffizienz: Verbessert den Produktionsfluss bei gleichzeitig reduzierten Energieanforderungen. • Industrieanwendungen: Einsatz in der chemischen Industrie sowie Verpackungsindustrie.
11. Fördertechnik und Pneumatische Fördersysteme A. Coperion K-Tron Pneumatic Conveying Systems • Verwendungsbereich: Diese Förderanlagen sind auf die Förderung von Schüttgütern über Rohrsysteme mit Luftdruck spezialisiert. • Besondere Merkmale: • Sichere Materialhandhabung: Die Systeme sind so konzipiert, dass sie empfindliche Materialien ohne Beschädigung oder Verunreinigung transportieren. • Modularer Aufbau: Kann an verschiedene Produktionsprozesse angepasst werden. • Vielseitig: Ideal für den Einsatz in der Lebensmittel-, Pharma- und Chemieindustrie. B. K-Tron Smart Conveying Systems • Verwendungsbereich: Entwickelt für die intelligente Steuerung von Fördersystemen in einer Industrie 4.0-Umgebung. • Besondere Merkmale: • Integration von IoT-Funktionen für eine Echtzeitüberwachung und Prozessoptimierung. • Energieeffizienz: Optimiert den Luftstrom, um den Energieverbrauch zu minimieren. • Einfache Integration in bestehende Produktionslinien.
12. Mischsysteme und Komplexe Verfahren A. Coperion ZMX Series • Verwendungsbereich: Diese Mischsysteme sind für hochviskose Materialien geeignet, die ein intensives und gleichmäßiges Mischen erfordern. • Besondere Merkmale: • Hocheffizienter Mischprozess, besonders geeignet für Materialmischungen, bei denen die Konsistenz entscheidend ist. • Energieoptimiert: Minimiert den Energieverbrauch bei gleichzeitig hohem Durchsatz. • Vielfältige Anwendungen: Besonders im Recycling von Kunststoffen und bei der Fertigung von Verbundwerkstoffen. B. Continuous Mixers • Verwendungsbereich: Diese Maschinen sind darauf ausgelegt, kontinuierlich Materialien zu mischen, was sie besonders effizient für die Herstellung von großen Mengen von Masterbatches und Polymerkomponenten macht. • Besondere Merkmale: • Kontinuierliche Materialzufuhr: Sicherstellt, dass der Mischprozess kontinuierlich und ohne Unterbrechungen erfolgt. • Hochpräzise Steuerung der Mischparameter wie Temperatur, Drehzahl und Druck. • Anwendungen: Besonders geeignet für Anwendungen in der Kunststoffverarbeitung und Chemieindustrie.
13. Service und Wartung der Maschinen Coperion bietet einen umfassenden Service und Wartungsplan für alle seine Maschinen. Dieser umfasst: • Vor-Ort-Service: Coperion-Servicetechniker bieten Inspektionen, Reparaturen und Optimierungen direkt vor Ort. • Remote-Monitoring: Viele Maschinen von Coperion sind mit IoT-Sensoren ausgestattet, die es ermöglichen, den Zustand der Maschinen fernüberwachen und bei Bedarf ferngesteuert anzupassen. • Ersatzteile: Coperion bietet ein umfassendes Netzwerk für Ersatzteile und Upgrades, um sicherzustellen, dass die Maschinen immer mit maximaler Leistung arbeiten.

Geschichte von Coperion • Gründung und frühe Jahre: Coperion wurde im Jahr 1879 gegründet und hat seinen Hauptsitz in Stuttgart, Deutschland. • Entwicklung unter Georg Fischer: Im Jahr 2000 wurde Coperion als Tochterunternehmen des Schweizer Unternehmens Georg Fischer gegründet. Georg Fischer brachte dabei seine Unternehmensgruppen Waeschle und Buss sowie die von Thyssenkrupp neu erworbene Werner & Pfleiderer in die Coperion ein. Dies führte zu einem Anbieter von Systemen und Komponenten für die Kunststoffverarbeitung mit 2.000 Mitarbeitenden und einem Umsatz von rund 400 Millionen Euro. • Verkäufe und Übernahmen: Zwischen 2006 und 2007 veräußerte Georg Fischer schrittweise seine Anteile an Coperion an die britische Beteiligungsgesellschaft Lyceum Capital. Im Jahr 2008 erwarb Coperion die Hartmann Fördertechnik GmbH in Offenbach am Main. Im Oktober 2012 übernahm der US-Industriekonzern Hillenbrand das Unternehmen. • Fusion mit K-Tron: Im Jahr 2010 erwarb Hillenbrand die Firma K-Tron, einen Spezialisten für Dosieranlagen und pneumatische Fördersysteme. Drei Jahre später, im Jahr 2013, fusionierte K-Tron mit Coperion, wodurch der Geschäftsbereich Coperion K-Tron entstand. • Aktueller Stand: Heute ist Coperion ein Weltmarktführer in der Projektierung, Herstellung und Installation von Anwendungen für Compounding und Extrusion, Schüttgutlogistik sowie zahlreicher damit zusammenhängender Service-Dienstleistungen. Das Unternehmen ist an 30 Standorten weltweit aktiv und beschäftigt etwa 5.000 Mitarbeiter. Wichtige Führungskräfte • Ulrich Bartel (Vorsitzender): Ulrich Bartel ist Vorsitzender der Geschäftsführung von Coperion. • Klaus Beulker, Thomas Hummel, Falk Kohler, Markus Parzer: Diese Führungskräfte unterstützen Ulrich Bartel in der Geschäftsführung von Coperion. • Markus Parzer: Markus Parzer kam 1992 zu Coperion. Nach seiner Ausbildung als Industriemechaniker arbeitete er zunächst als Facharbeiter in der Extruder-Montage in Stuttgart, bevor er ein Studium des Wirtschaftsingenieurwesens an der Hochschule Esslingen absolvierte. Er hatte verschiedene Positionen in der Produktion am Standort Stuttgart inne, übernahm 2014 die Führung des Order Managements und leitete seit 2015 die Business Unit Extrusion Systems. Seit 2020 führt er die Business Unit Polyolefins.

# Glossary

#### Tags

#Pavilion #Hall9 #Hall14

**Circular Economy** A circular economy is an economic system aimed at eliminating waste and the continual use of resources.

**Resource Material** Plastic is viewed as a resource material, since significant energy is used in its manufacture (base material petroleum or natural gas) and it can be recycled well. Refuse is presorted, crushed, and then processed into high-value regenerate which is then reused in the plastics industry, closing the loop.

**Post-Consumer Waste** Post-consumer waste is waste originating from users, i.e., individual persons, households, and offices.

**Post-Industrial Waste** Post-industrial waste is waste material resulting from manufacturing or production.

**Chemical Recycling** Using chemical recycling, fossil-based resources can be replaced by material recycled from plastic waste. Using thermochemical processes, plastic waste is transformed and recycled into raw materials, whereby new products with outstanding product characteristics result, based upon recycled plastic waste.

**Mechanical Recycling** The term mechanical recycling designates the mechanical processing of used plastics. The chemical structure remains unchanged.

**Thermal Utilization** Incineration of plastics; should take place whenever possible in waste incineration plants equipped for this purpose in order to filter out highly toxic substances that are released during incineration, such as dioxins, furans, mercury, cadmium, lead, etc.

**Upcycling** Processing of lower-value recyclates, transforming them to higher-value compounds.

**Odor reduction** When recycling plastics, there is often the difficulty that the plastic reused and the recyclates made from it have strong odors. For example, post-consumer plastic waste contains migrated substances from food, cosmetics or cleaning agents. At the same time, residues of monomers, oxidation, hydrolysis and decomposition products can be responsible for the unwanted odors. Odor reduction measures can be taken in various process steps of plastics production and processing. Coperion offers both technologies for degassing during compounding processes and for odor reduction in silos.