

Product-group categories

1. Development	1.1 Development and design 1.2 IT systems/software 1.3 Model making and prototyping 1.4 Tooling and mold making 1.5 Tools 1.6 Semi-finished goods, materials 1.7 Process materials
2. Manufacturing	2.1 Stamping, shaping and bending techniques 2.2 Surface treatment, refinement 2.3 Injection molding for plastics 2.4 Integrated technologies for processing metals/plastics 2.5 Assembly and handling technology, periphery, automation 2.6 Interconnection technology 2.7 Process and quality control 2.8 Production logistics 2.9 Occupational safety and environmental protection 2.10 Used machines, systems, plants
3. Hybrid components	3.1 Stamped parts/components 3.2 Technical plastics parts/components 3.3 Hybrid components 3.4 Research & Services
4. Molded interconnect devices (MID) & conductive plastics	4.1 MID development & materials 4.2 MID manufacturing 4.3 MID components 4.4 MID research & development
5. Ceramic injection molding, Metal injection molding (CIM/MIM), Ceramic hybrid solutions	5.1 CIM/MIM development & raw materials 5.2 CIM/MIM manufacturing 5.3 CIM/MIM components 5.4 CIM/MIM research & development 5.5 Ceramic hybrid solutions

Application Index

A. Metal/plastic composite solutions according to user industry	A.1 Automotive A.2 Electrical engineering/electronics A.3 Medical technology/medical electronics A.4 Information technology/data-systems technology A.5 Telecommunications A.6 Industrial engineering/plant and machinery technology A.7 Precision mechanics/optics A.8 Sensors/mechatronics A.9 Power engineering, e.g. solar energy A.10 Building-services/electrical-installation technology A.11 Aviation/aerospace A.12 Consumer electronics A.13 Household and appliance technology A.14 Sporting-goods industry A.15 Consumer-goods industry A.16 Furniture industry A.17 Other user industries
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Product-group categories

1. Development	
1.1 Development and design	1.1.1 Design 1.1.2 Component and system development 1.1.3 Product development 1.1.4 Process development 1.1.5 Development and design engineering 1.1.6 Other – Development and design
1.2 IT systems/software	1.2.1 CAD/CAM systems 1.2.2 3D software 1.2.3 Simulation 1.2.4 Software for model making and prototyping 1.2.5 Software for tool and die making 1.2.6 Other – IT systems/software
1.3 Model making and prototyping	1.3.1 Model making and prototyping 1.3.2 Rapid prototyping 1.3.3 3D modeling 1.3.4 3D printing 1.3.5 Stereo lithography (STL) 1.3.6 Laser sintering (SLS) 1.3.7 Vacuum casting technology 1.3.8 Prototyping tools 1.3.9 Rapid tooling techniques (LaserCUSING®, EBM) 1.3.10 Small-batch manufacturing 1.3.11 Other – making and prototyping
1.4. Tool and die making	1.4.1 Tool making - Design 1.4.2 Tool design for injection molding 1.4.3 Tool design for stamping, bending and shaping techniques 1.4.4 Erosion technology 1.4.5 Standards for stamping, bending and shaping tools 1.4.6 Standards for injection-molding tools 1.4.7 Other – Tool and die making

1. Development	
1.5 Tools	1.5.1 Cutting, stamping, bending and shaping tools 1.5.2 Deep-drawing tools 1.5.3 Follow-on composite and cutting tools 1.5.4 High-performance precision tools 1.5.5 Plastic injection-molding tools 1.5.6 2-component injection molding tools 1.5.7 In-mold tools 1.5.8 Tools for hybrid molds 1.5.9 Tool-handling and tool-fastening systems 1.5.10 Tool-clamping devices 1.5.11 Separating tools 1.5.12 Spare tool parts 1.5.13 Other – tools
1.6 Semi-finished goods, materials	1.6.1 Intermediate/semi-finished products, metallic 1.6.2 Strip metals/coils 1.6.3 Intermediate/semi-finished products, plastics 1.6.4 Other – Semi-finished goods, materials
1.7 Process materials	1.7.1 Chemicals 1.7.2 Polishing agents 1.7.3 Cleaning agents 1.7.4 Lubricants 1.7.5 Other process materials

2. Manufacturing	
2.1 Stamping, shaping and bending techniques	2.1.1 Bending machines and systems 2.1.2 Lathes 2.1.3 Presses 2.1.4 Roll bending machines 2.1.5 Stamping machines and systems 2.1.6 Special-purpose machines 2.1.7 Service-providers – Stamping and shaping 2.1.8 Other equipment, spare parts and accessories for shaping and stamping
2.2 Surface treatment, refinement	2.2.1 Electroplating, surface-treatment service provider 2.2.2 Coil coating, surface-treatment service provider 2.2.3 Erosion technology, surface-treatment service provider 2.2.4 Etching, surface-treatment service provider 2.2.5 Metal coating, surface-treatment service provider 2.2.6 Plastic coating, surface-treatment service provider 2.2.7 Plasma/laser-based surface refining, surface-treatment service provider 2.2.8 Thermal surface treatment, surface-treatment service provider 2.2.9 Marking techniques, surface-treatment service provider 2.2.10 Machines and systems for surface treatment and refinement 2.2.11 Other equipment, spare parts and accessories for surface treatment and refinement
2.3 Injection molding for plastics	2.3.1 Injection molding machines and systems 2.3.2 Multi-component molding machines 2.3.3 Hot runner systems 2.3.4 Service-providers – Injection molding 2.3.5 Other equipment, spare parts and accessories for injection molding for plastics

2. Manufacturing

<p>2.4 Integrated technologies for processing metals/plastics</p>	<p>2.4.1 Automation solutions for metal/plastic composites 2.4.2 Assemblies (mounted in plastic) 2.4.3 Inserts (plastic injected around inserted part) 2.4.4 Outserts (part surrounds injected plastic) 2.4.5 Rear injection of metals 2.4.6 Solutions for close injection molding 2.4.7 In-mold decoration (IMD) 2.4.8 Reel-to-reel techniques 2.4.9 Inline techniques 2.4.10 Modular manufacturing techniques 2.4.11 Integrated manufacturing cells 2.4.12 Other integrated technologies for processing metals/plastics</p>
<p>2.5 Assembly and handling technology, periphery, automation</p>	<p>2.5.1 Reeling/unreeling machines 2.5.2 Strip position control systems 2.5.3 Strip-storage systems 2.5.4 Strip-straightening machine 2.5.5 Strip-lubricating systems 2.5.6 Removal systems 2.5.7 Feeders, feed technology 2.5.8 Conveyor systems 2.5.9 Reels 2.5.10 Plastic feeder systems 2.5.11 Assembly equipment and systems 2.5.12 Robots 2.5.13 Cleaning equipment 2.5.14 Lubricating equipment and systems 2.5.15 Other equipment, spare parts and accessories for assembly and handling technology, periphery and automation</p>
<p>2.6 Interconnection technology</p>	<p>2.6.1 Plug contacts 2.6.2 Solder contacts 2.6.3 Cut/clamping contacts 2.6.4 Welded contacts 2.6.5 Press-fit contacts 2.6.6 Crimp contacts 2.6.7 Wire bonding 2.6.8 Adhesive / assembling joints 2.6.9 Other interconnection technologies</p>

2. Manufacturing

2.7 Process and quality control	2.7.1 Production data-acquisition (PDA) systems 2.7.2 Machine data-acquisition (MDA) systems 2.7.3 Manufacturing execution systems (MES) 2.7.4 Measuring, testing and inspection equipment 2.7.5 Image-processing systems 2.7.6 Compression force control systems 2.7.7 Process measuring technology 2.7.8 Process control and automation 2.7.9 Process monitoring 2.7.10 Sensors 2.7.11 Regulation and control equipment 2.7.12 Tool-safety equipment 2.7.13 Tool monitoring 2.7.14 Other equipment, spare parts and accessories for process and quality control
2.8 Production logistics	2.8.1 Coils 2.8.2 Storage systems and equipment 2.8.3 Warehouse logistics systems and equipment 2.8.4 Packaging technology 2.8.5 Anchoring technology/Feed systems 2.8.6 Service providers: Logistics, contract packaging, transport 2.8.7 Other equipment, spare parts and accessories for production logistics
2.9 Occupational safety and environmental protection	2.9.1 Disposal 2.9.2 Recycling 2.9.3 Safety engineering 2.9.4 Environmental technology 2.9.5 Other – Occupational safety and environmental protection
2.10 Used machines, systems, plants	2.10.1 Plants 2.10.2 Machines 2.10.3 Systems 2.10.4 Other used machines, systems and plants

3. Hybrid components	
3.1 Stamped parts/components	3.1.1 Bent parts 3.1.2 Turned parts 3.1.3 Injection molded parts 3.1.4 Compression molded parts 3.1.5 Stamped bent parts 3.1.6 Stamped parts 3.1.7 Drawn parts 3.1.8 Other stamped parts/components
3.2 Technical plastic parts/components	3.2.1 Plastic injection-molded parts 3.2.2 Two-shot injection-molding components 3.2.3 Silicon injection-molded parts 3.2.4 Rubber injection-molded parts
3.3 Hybrid components	3.3.1 Metal/plastic hybrid components 3.3.2 Metal/rubber hybrid components 3.3.3 Plastic/plastic hybrid components 3.3.4 Plastic/rubber hybrid components 3.3.5 Metal/ceramic components 3.3.6 Other hybrid components 3.3.7 Hybrid housings 3.3.8 Hybrid frames 3.3.9 Hybrid assemblies 3.3.10 MID components
3.4 Research & Services	3.4.1 Contract/basic research 3.4.2 Research organizations 3.4.3 Trade associations 3.4.4 Education/training 3.4.5 Consulting 3.4.6 General overall/modernization 3.4.7 Retrofitting 3.4.8 Repair/maintenance 3.4.9 Publishers 3.4.10 Services, other

4. Molded interconnect devices (MIDs) & conductive plastics	
4.1 MID development & raw materials	4.1.1 Design & engineering 4.1.2 Raw materials, conductive plastic compounds 4.1.3 Design & development 4.1.4 Prototyping and tool making 4.1.5 Other – MID development & raw materials
4.2 MID manufacturing	4.2.1 Injection molding: Precision injection molding 4.2.2 Injection molding: 2-component injection molding 4.2.3 Injection molding: Insert molding 4.2.4 Metallization: Chemical/electro-plating 4.2.5 Structurizing: 2-component techniques 4.2.6 Structurizing: Laser direct techniques 4.2.7 Structurizing: Hot stamping 4.2.8 Structurizing: 3D masks 4.2.9 Structurizing: Flamecon 4.2.10 Structurizing: Other 4.2.11 Printed circuit boards 4.2.12 Surface technology/finishing 4.2.13 Assembly & connecting technology 4.2.14 Adhesive techniques 4.2.15 Other – MID manufacturing
4.3 MID components	4.3.1 MID components (Molded Interconnect Devices) 4.3.2 Hybrid MID components 4.3.3 Other – MID components
4.4 MID research & development	4.4.1 Research organizations 4.4.2 Trade associations 4.4.3 Services/engineering for MID 4.4.4 Publishers 4.4.5 Other – MID research & development

5. Ceramic-powder injection molding (CIM), Metal-powder injection molding (MIM), Solutions for ceramic hybrids

5.1 CIM/MIM development & raw materials	<ul style="list-style-type: none"> 5.1.1 Design und Design 5.1.2 Raw materials: metallic powder 5.1.3 Raw materials: ceramic powder 5.1.4 Binders 5.1.5 Ceramic feedstock 5.1.6 Metallic feedstock 5.1.7 Tool development, tool design 5.1.8 Tool and die making 5.1.9 CIM/MIM prototyping 5.1.10 Other – CIM/MIM development & raw materials
5.2 CIM/MIM manufacturing	<ul style="list-style-type: none"> 5.2.1 Injection molding machines for metal/ceramic powder 5.2.2 Binder removal techniques/systems 5.2.3 Sintering techniques/systems 5.2.4 Surface treatment 5.2.5 Joining and connecting technologies 5.2.6 Other –CIM/MIM manufacturing
5.3 CIM/MIM components	<ul style="list-style-type: none"> 5.3.1 Injection-molded parts made from metallic powder 5.3.2 Injection-molded parts made from ceramics 5.3.3 Ceramic/metal hybrids 5.3.4 Ceramic/plastic hybrids
5.4 CIM/MIM research & services	<ul style="list-style-type: none"> 5.4.1 Research organizations 5.4.2 Services, Engineering for metal and plastic powder injection molding 5.4.3 Trade associations 5.4.4 Publishers 5.4.5 Other – CIM/MIM research & services
5.5 Solutions for ceramic hybrids	<ul style="list-style-type: none"> 5.5.1 Research organizations 5.5.2 Ceramic tapes / LTCC-ceramics 5.5.3 Ceramic hybrid processing 5.5.4 Joining and bonding technologies 5.5.5 Ceramic hybrid components