

MOCOM

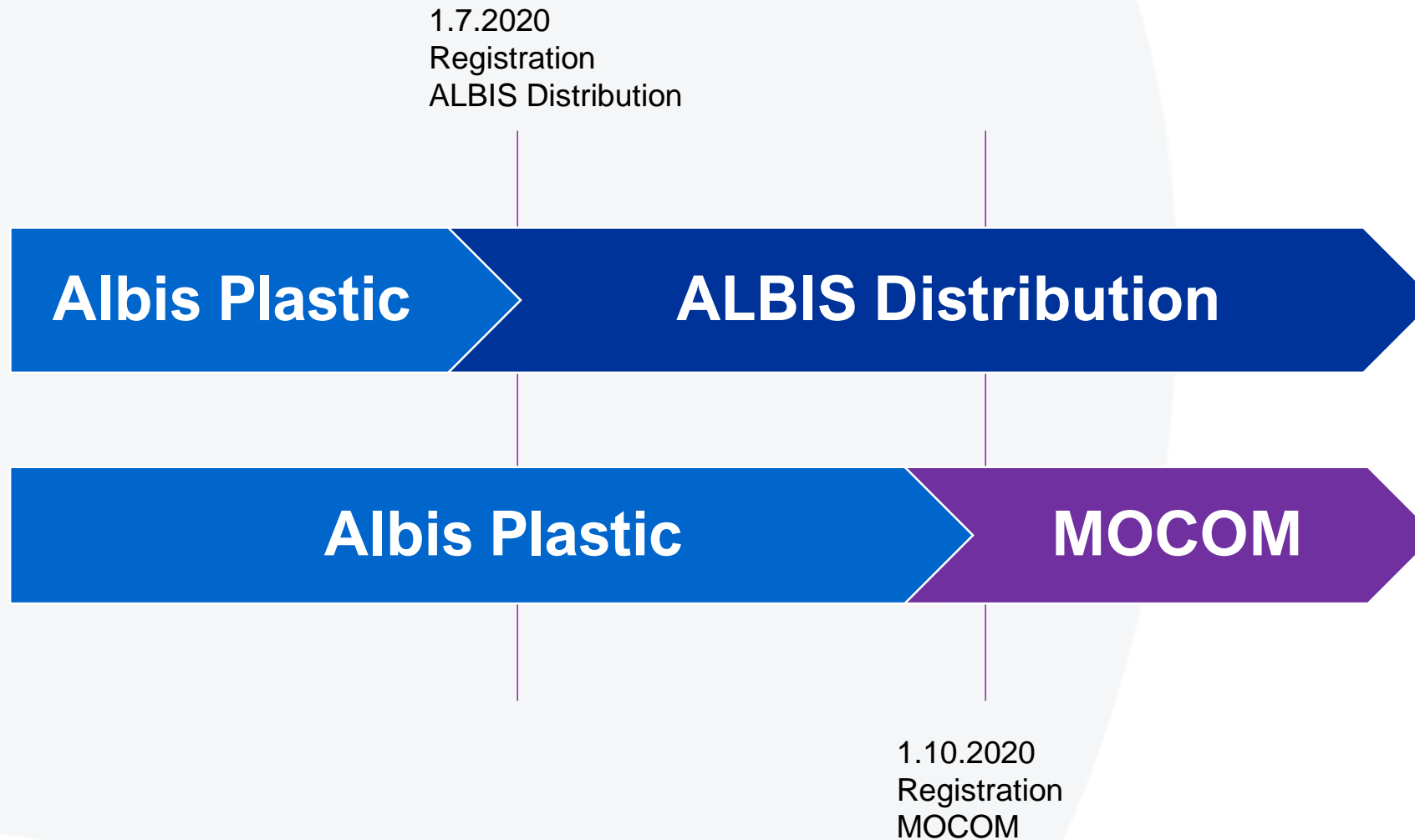
**We drive
compounding
excellence**



MOCOM

The ALBIS PLASTIC Compounding Unit

Our Founding



Accelerate our Future – Transformation Process

MOCOM as a new business and brand in the market was launched mid July. Legal entity will be created in October.

Direct Sales established

Around 160 customers in EU. Dedicated Sales, Marketing and Technical Service Teams and Customer Service created

Our Direct Customers

We are expanding our direct customer base; currently we serve customers in DE, AT, CH, FR, ES, PL, CZ, SL, US, MX, CN

ALBIS Distribution, Key Sales Channel

Customers not covered directly are handled by ALBIS Distribution as before

Business Activities

Compounding own brands and tolling for 3rd parties (includes license products for ALBIS).

QM Processes

All processes were updated after reorganization and IATF 16949 certificate confirmed after July 2020 audit



Our Vision



**We drive compounding
excellence, innovation
and sustainability
creating thermoplastic
solutions of tomorrow.**

Facts & Figures (Worldwide)



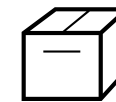
50
years' compounding
experience & know-how



> 5,000
customers



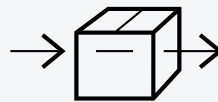
70
people in
sales & development



> 10,000
products,
global specifications



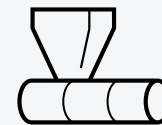
> 1,000
development
requests p.a.



> 11,000
production
orders p.a.



5
productions sites
DE, CN, US



63
compounding-lines
ZSK25 – ZSK80



Certificates
IATF 16 949:2016
ISO 50001:2011
ISO 13485:2016
EcoVadis

Sales & Production Sites

Americas

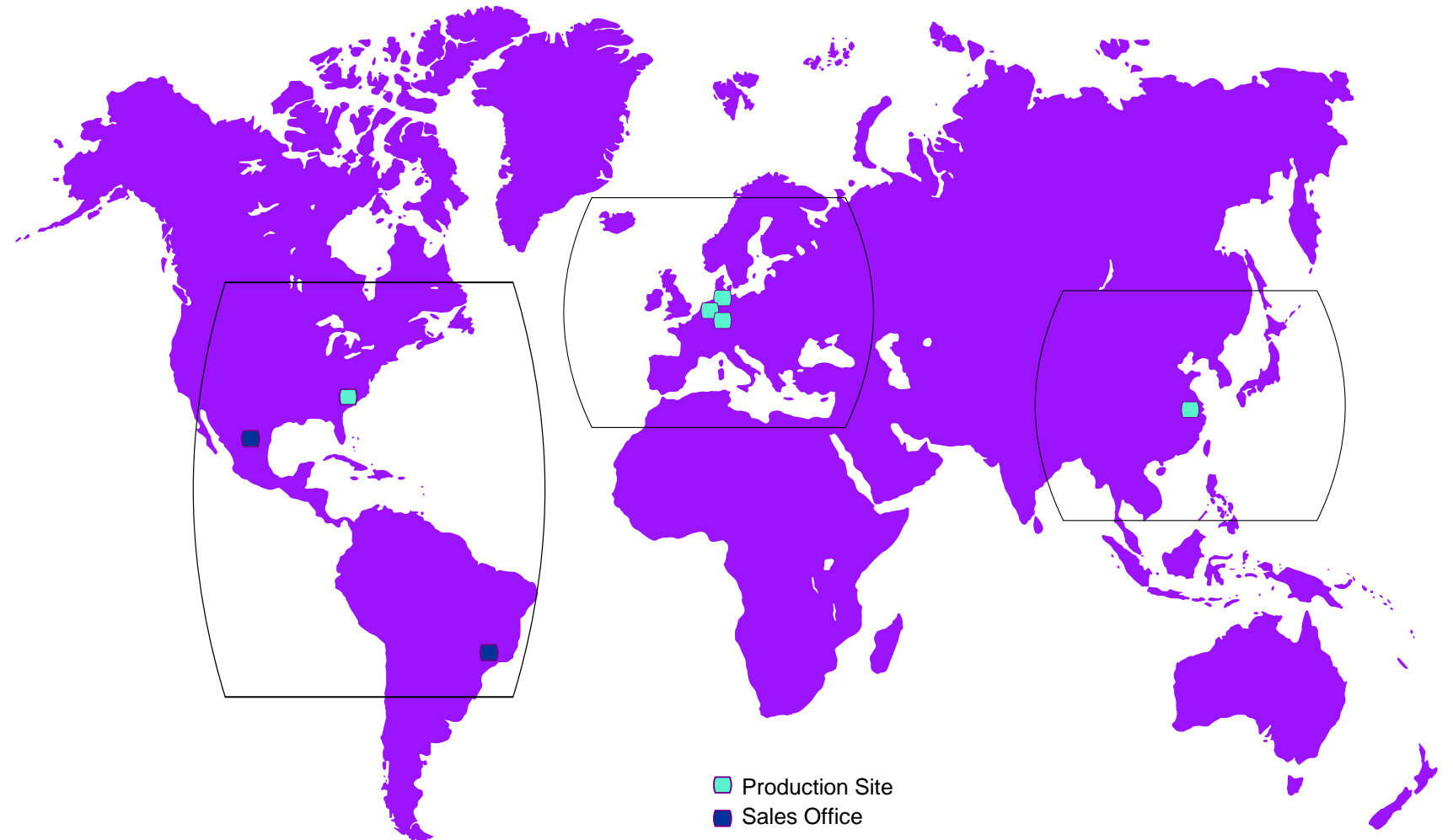
- Duncan, SC, USA
- Monterrey, (México)
- Sao Paulo, (Brazil)

Europe & Africa

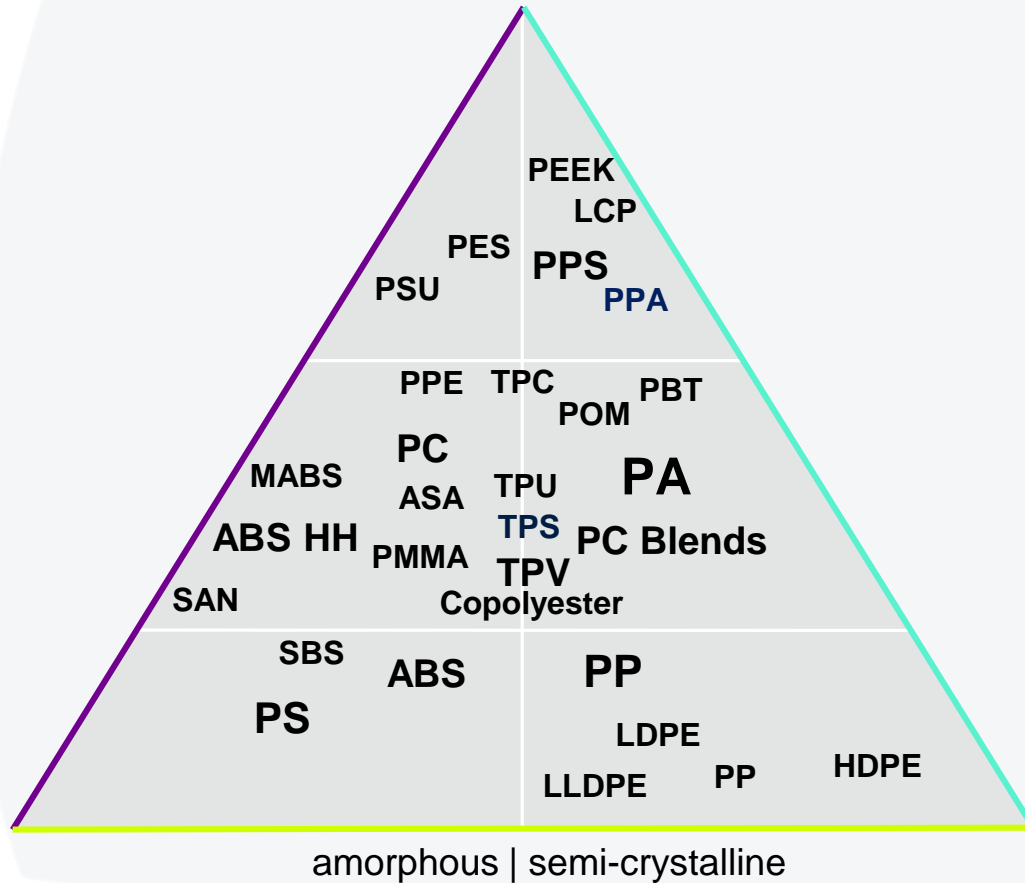
- Hamburg, DE
- Zülrich, DE
- Obernburg, DE

Asia-Pacific

- Changshu, CN



Product Portfolio



SPECIALTIES

- ❖ Alcom[®]
- ❖ Alcom[®] MED
- ❖ Alcom[®] 3D
- ❖ Tedur[®]
- ❖ Cellidor[®]
- ❖ Alcolor[®]
- ❖ Alperform[®]

ADVANCED PRODUCTS

- ❖ Altech[®]
- ❖ Altech NXT PP[®]
- ❖ Alfater XL[®]
- ❖ Shelfplus[®] O₂

RECYCLING

- ❖ Altech[®] ECO
- ❖ Altech[®] IQ
- ❖ Alfater XL[®] ECO

Technical Service Center

Expertise
from
early
design
stage
to series
production

Design (Component & Mold)

Product-specific design support,
incl. structural analysis and
molding simulations

Material Selection

Best material fit for the application

Product Development

Taylor-made products to match
individual application requirements

Processing

Expert, hands-on technical support
to optimize the molding process



Market Expertise - We Understand Your Business



Automotive



Home & Garden



Electrical & Electronics



Healthcare



Industrial



Sports & Leisure

Our Business Development Managers and Product Specialists are working daily with customers to match application requirements with product properties finding the best material solutions.

We cover with our product portfolio various market segments and display here some typical applications as reference and inspiration for designers and material experts.

For more information refer to...

www.mocom.eu

info@mocom.eu

MOCOM

ALCOM®

Specialty products for ambitious applications

Innovative Specialties Performing For You

Specialty
products
for
ambitious
applications

- ❖ Alcom®
- ❖ Alcom® MED
- ❖ Alcom® 3D
- ❖ Tedur®
- ❖ Cellidor®
- ❖ Alcolor®
- ❖ Alperform®



Light Diffusion



Wear & Friction

❖ Alcom®



Thermal Conductivity



High Precision

Reflector For Front And Backlights (LB)

❖ Alcom®

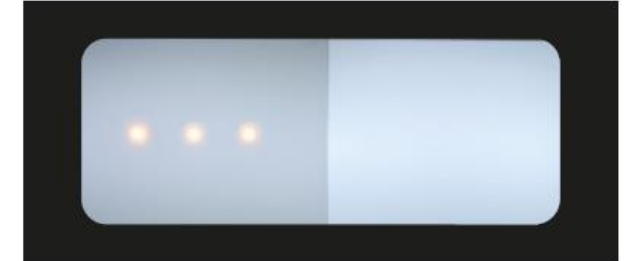
- PORSCHE, CITROEN, RENAULT
- **ALCOM PWL 10/1.1 WT1302-05LB**
- Material Solution
 - High light reflection
 - No leaking of light into neighboring chambers
 - Vaporizable with aluminum
 - High thermal stability
 - Design upgrade



Gear Shift (LD)

- BMW AG
- **ALCOM PC 740/4 UV WT1306-07LD**
- Material Solution
 - Homogenous illumination of the functional lighting
 - Sharp contours of illuminated symbols from any viewing angle
 - Excellent light transmission

Alcom®



left: standard material, right: Alcom®



Ambient Lighting (LG)

- Automotive
- **ALCOM PC 740/4 UV CC1323-08LG**
- **ALCOM LG PC 1000 UV 14094 CC1323-08**
- Material Solution
 - Homogeneous light guide diffusion
 - Optimum light output
 - Good mechanical properties
 - Good flow properties
 - Integration of snap fits possible



ALCOM® CFX Color Effects

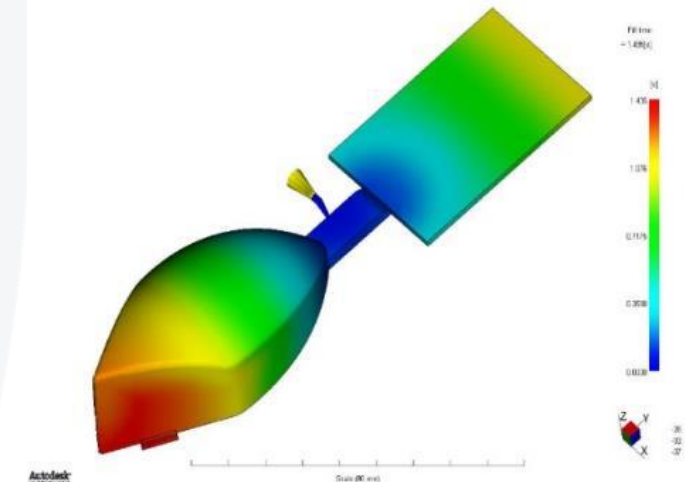
- Our new ALCOM® CFX MC compounds have a metallic surface aspect with optimized (reduced) flow lines.
- Colored compounds for high quality design and construction concepts
- Metallic effect – galvano, aluminium, etc.
- Flip-flop effect
- Pearl effect
- Fluorescent effect
- Afterglow effect



ALCOM® CFX Color Effects

■ Benefits:

- For a variety of color impressions from light to dark
- All polymers possible
- Knit-lines optimized thru Mold Flow simulation
- Homogenous surfaces – nominal wall thickness
- Individual variations of colors possible in color development
- Cost optimized as additional coatings not necessary
- Metallic compounds with galvanic aspect are in line with the trend in automotive sector as well as E+E to eliminate painting.
- “molded in color”
- Possible applications are decorative trims, housings, buttons, amongst others.
- Our new ALCOM® CFX MC compounds have a metallic surface aspect with optimized (reduced) flow lines.



ALCOM® CFX Color Effects



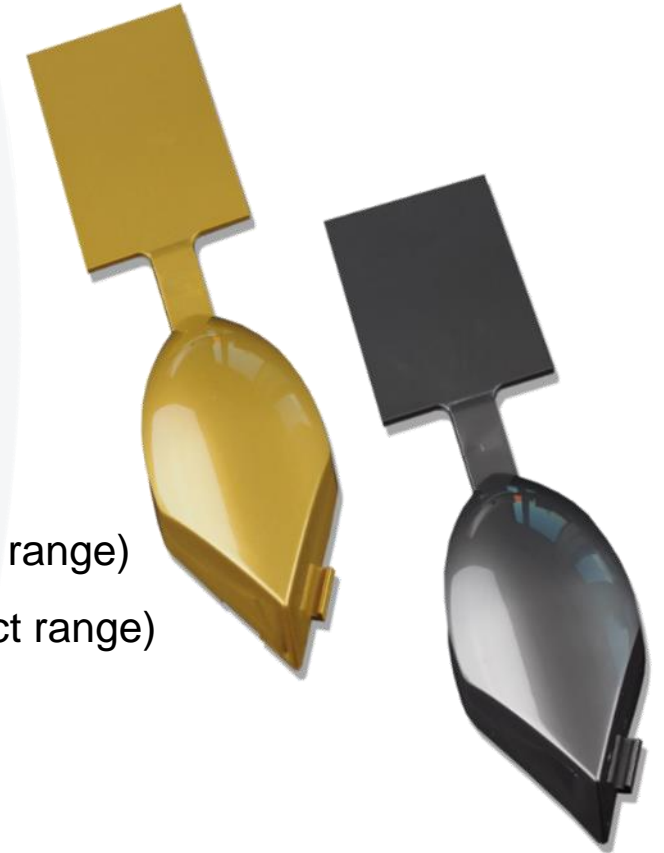
■ Core Product Range

- ALCOM® CFX ASA 1000 UV 15116 SV1163-15MC
- ALCOM® CFX PC 1000 UV 16005 SV1009-16MC
- ALCOM® CFX ABS 1000 16012 SV1017-16MC
- ALCOM® CFX ABS UV 1000 16013 GY1018-16MC
- ALCOM® CFX ABS 1000 16001 GD1000-16MC
- ALCOM® CFX PA66 1000 16126 SV1159-16MC (development product for product range)
- ALCOM® CFX PP 4915 UV 17137 SV1137-17MC (development product for product range)

■ Masterbatch

- ALCOLOR® FUNCTION ASA UV A SV5052-15MC

- Customized developments are possible



ALCOM® CFX Color Effects



- BMW
- **ALCOM PA6 900/8 GF10 MR20 SV12-778MCF**
- Material Solution
 - Metallic surface
 - Reduced tendency to warp
 - High heat resistance



ALCOM® CFX Color Effects

- On going Automotive Projects
- Roof Racks
- Center Console Ornament Rings
- Vent Assy



Alcom®



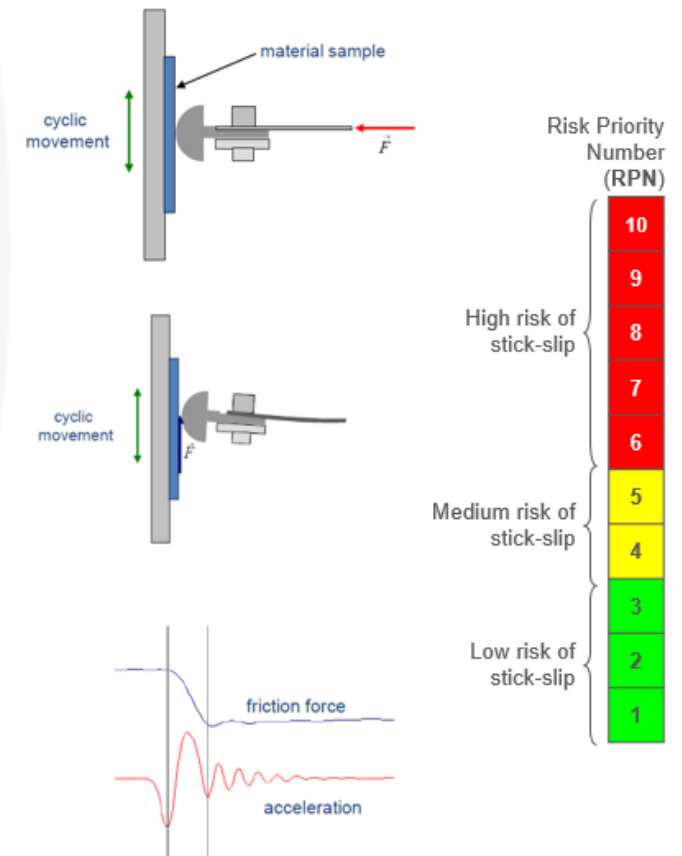
ALCOM® MS – Anti Squeak



- Prevention of squeak noise caused by stick-slip of plastic parts in direct contact
- Test results according to established test method “VDA 230-206: Examination of the stick-slip behavior of material pairs“
- Improved “Risk Priority Numbers” (RPN) at different speeds and loads
- No significant change of mechanical properties (compared to unmodified compound)

Alcom® MS – Anti Squeak: the advantages at a glance

- Prevention of squeak noises, effectiveness tested by Ziegler test (VDA 230-206)
- Retention of mechanical properties
- Cost reduction by elimination of additional process steps
- Paintability successfully proven



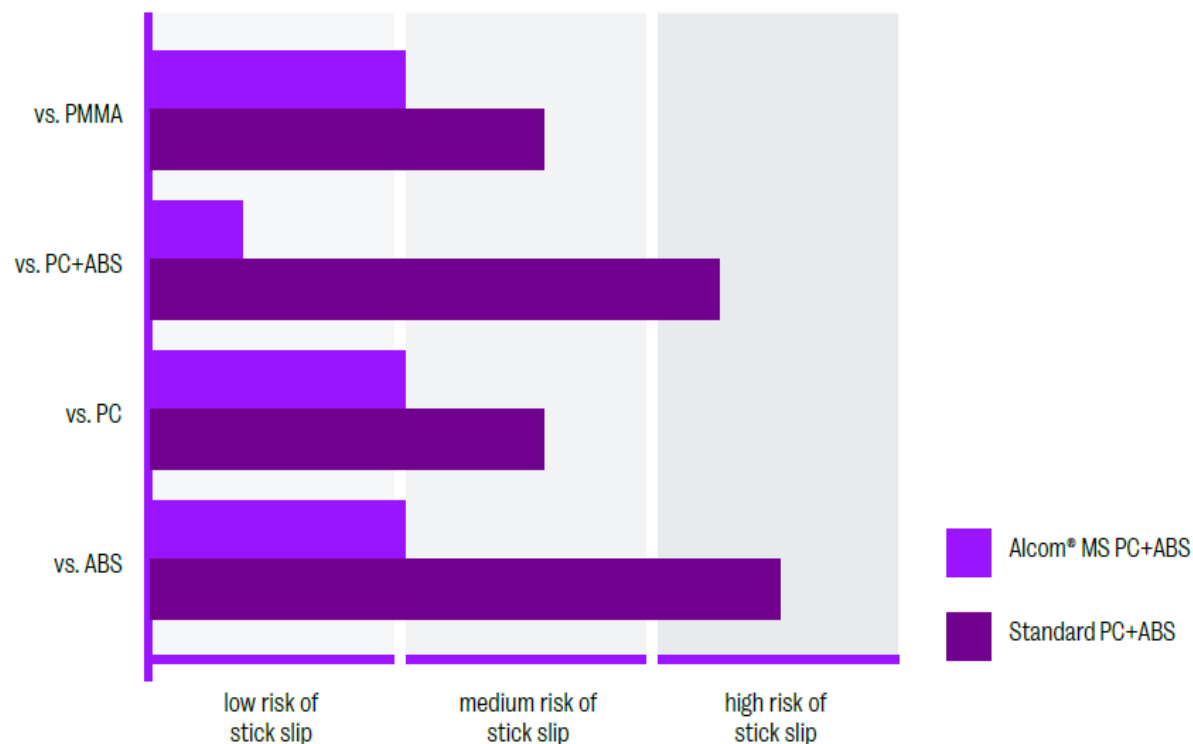
ALCOM® MS – Anti Squeak



PA66 GF50

Alcom® MS PA66+6I/X GF50

Comparison of the noise risk of Alcom® MS to standard*



* risk priority index according to VDA230-206

Alcom® MS – Anti Squeak

Material

Alcom® MS PC 1000 17115 BK0002-00

Alcom® MS ABS 1000 17114 BK0002-00

Alcom® MS PC+ABS 1000 17113 BK0002-00

Alcom® MS PA66+6I/X – Highly reinforced Nylon

Material		Tensile modulus (dry/cond.) (MPa)	Tensile strength (dry/cond.) (MPa)	Tensile strain at break (dry/cond.) (%)
Alcom® MS PA66+6I/X	2030 UV 18054 BK0002-00	9000 / -	165 / -	2.4 / -
	2050 UV 17159 BK0002-00	17000 / 13500	- / 180	2.5 / 3.3
	2060 UV 17066 BK0002-00	21000 / 17000	250 / 200	2 / 3
	2040 FR GY1185-19	15500 / -	160 / -	1.5 / -
Alcom® MS PA6	2030 UV SB1181-19	9400 / -	155 / -	2.7 / -
	2030 UV SB1181-19	16500 / -	220 / -	2.6 / -

ALFATER XL® Soft-Flexible-TPV

Alfater XL®: the advantages at a glance

- Broad hardness range (Shore A40 to D50)
- Easy thermoplastic processing (e.g. injection molding, extrusion, blow molding)
- Good recyclability
- Easy coloration (direct or with masterbatch)
- Low density ($< 1 \text{ g/cm}^3$)
- Broad temperature range from $-40 \text{ }^{\circ}\text{C}$ up to $130 \text{ }^{\circ}\text{C}$
- Low tension and compression set
- Good damping and anti-vibration
- Anti-slip and good grip
- Heat ageing resistance
- Resistance against weathering, moisture, UV and ozone
- Resistance against many aqueous solutions, acids and alkaline solutions
- Excellent bonding to polyolefins, TPO, TPV and PA

- Solution for many technical components, as an alternative to rubber.
- Based on PP and a dispersed, crosslinked EPDM phase.



ALFATER XL® Soft-Flexible-TPV

Alfater XL®: typical industries and applications

Automotive/Transportation

- Sealings and gaskets
- Bellow and boots
- Suctions pipes and air ducts
- Protective tubes
- Corner molds and end caps
- Glass encapsulation
- Spoiler and panels
- Sheaths and jackets
- Grommets
- Mats and inserts
- Soft-touch parts

Electrical/Electronics

- Cable parts and cable grommets
- Impact and shock protection
- Bumpers, bushings, connectors and plugs
- Sealings and gaskets
- Soft-touch handles
- Control elements
- Damping and vibration protection

Home/Garden/Industrial

- Protection and dust covers
- Impact and shock protection
- Bumpers and plugs
- Sealings and gaskets
- Soft-touch handles
- Casters
- Sheaths and jackets
- Damping and vibration protection
- Profiles and trims

Consumer Goods

- Sealings and gaskets
- Caps and closures
- Soft-touch parts
- Haptic parts
- Spouts and pourers
- Bumpers and plugs



Tedur® PPS Compounds



- Thermoplastics with excellent chemical resistance and high operating temperatures up to 240°C.
- Due to the low thermal expansion, Tedur® can be used as an ideal replacement for metals, metal alloys and ceramics.
- Tedur® meet the requirements of V-0 according to UL94 without any addition of flame retardants, in order to be predestined for the use in the E&E sector and e-mobility.

Tedur®: the advantages at a glance

- Very high continuous operating temperatures (up to 240 °C)
- Excellent hydrolysis, chemical and fuel resistance
- Very high rigidity and strength
- Low creep even at higher temperatures
- Flame retardant (V-0), without addition of flame retardant
- Very low water absorption
- Fill levels up to 80 %
- Easy flow



MOCOM

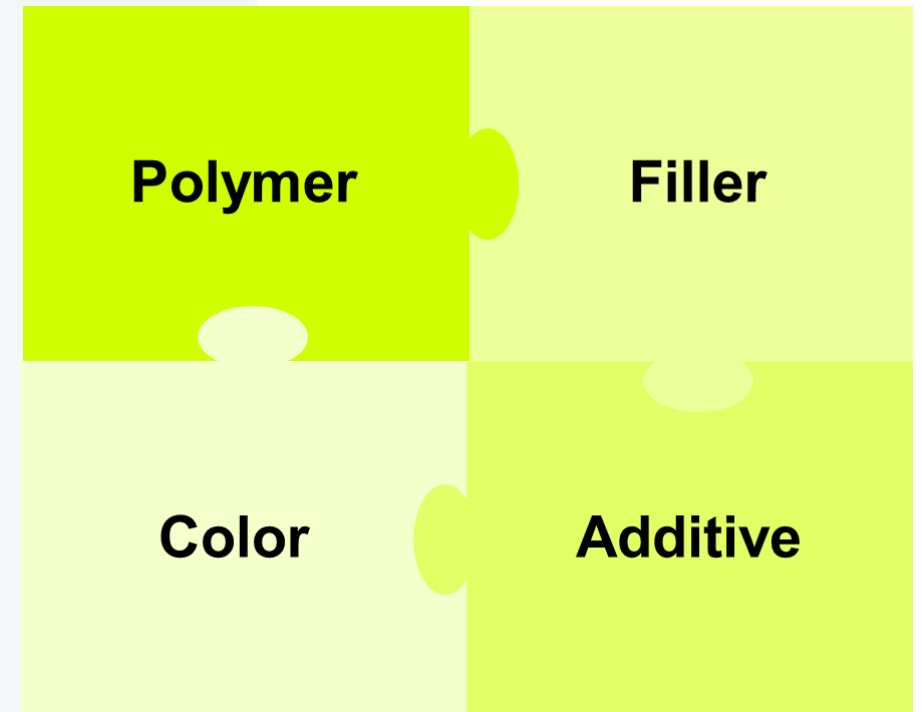
ALTECH®

Customized For You

ALTECH – Customized For You



- ALTECH® thermoplastic compounds are specifically tailored to fulfill highly individual customer requirements
- >3,000 formulations with numerous reinforcements and modifications available based on PA, PBT, PC, PC-Blends, ABS, PP, etc.
- By using our modular/ toolbox system, DOEs and experience we can develop additional compound variants according to our customer needs flexibly and quickly.
- ALTECH® compounds can be delivered in many different colors and tints, also with specially matched customer colors



Customized to your requirements!

ALTECH – Customized For You



ALTECH NXT PP

Molder: ETG

OEM: Audi

Frame

Benefits:

- Weight reduction
- Heat aging
- Design-support



ALTECH ABS / ALTECH SAN

Molder: INDIA Tastenfabrik

OEM: AVM

Router housing FRITZ!Box

Benefits:

- Customer colors
- Consistent color, batch-to-batch
- High impact strength



ALTECH PA

Molder: N.N.

OEM: N.N.

Power tools

Benefits:

- Customer color
- Mechanical/ thermal properties
- Worldwide, uniform specs, local production



ALTECH ECO PA

Molder: B+W

OEM: BMW

Engine(Beauty) Cover

Benefits:

- Sustainable, >80% recycle
- Top-surface quality
- Temperature/ mechanics
- Consistent high quality



Flange / Gasket for Driving Shaft

- Volkswagen
- T1: Bruss
- **ALTECH PA66 A 2050/106 BK0002-00**
- Material Solution
 - Hot oil resistant (1000 @ 150°C)
 - Improved surface appearance
 - High flow
 - Easy release (de-molding)



Cradle For Navigation System

- Volkswagen
- T1: Bury
- **ALTECH PA6 A 2035/109 BK1115-11**
- Material Solution
 - Good temperature resistance
 - High stiffness
 - Customer-specific coloration



Air Cleaner & Filter for Renault P32T (Air Intake)

❖ Altech®

- Nissan / Renault
- T1: Sogefi Filtration
- **ALTECH PP-H A 4940/506 BK0002-00**
- Material Solution
 - Dimensional stability
 - Good heat aging resistance
 - Welding capabilities
 - Chemical resistance
 - Good cost/performance ratio



Tailgate Handle With VW-Logo

❖ Altech NXT PP[®]

- Volkswagen
- **ALTECH NXT PP GF35 blk**
- Material Solution
 - Substitution PA6 GF30
 - Weight reduction of 18%, hence better CO2-footprint
 - VW 44045 §5.14 resistance to aging 1000h @150°C
 - Good UV-resistance
 - Fulfills requirements of PV 3930/3929 (Florida/ Kalahari)
 - Cost saving for final part



ALTECH ECO – Near-To-Prime®

ALTECH – PA6/66, PP, ABS, PC, PC-Blends

- Prime polymer, filler, additive, color customized
- Ultimate performance/ quality/ portfolio

ALTECH ECO – PA6/66, PP, PC

- Post-Industrial Recycling (PIR) polymer, filler, additive, colors
- ECO = Near-to-Prime® performance/ quality, matching demanding specifications

ALTECH IQ – PA6/66, PP, ABS, PC-Blends

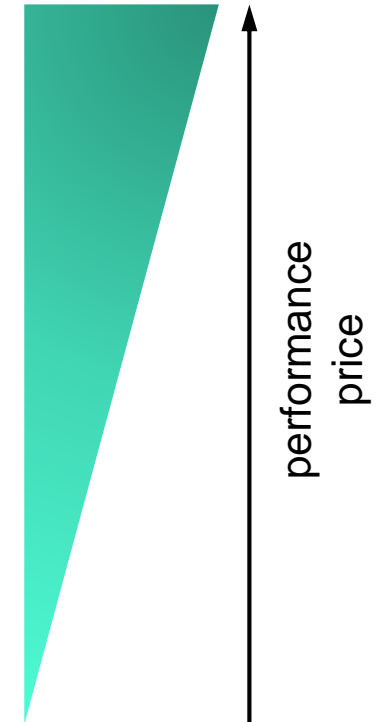
- PIR/PCR-polymer/ regrind, filler, additive, black
- IQ = Industrial Quality, less demanding, cost-critical

❖ Altech®

❖ Altech® ECO
Near-to-Prime®

❖ Altech® IQ

❖ Altech® ECO



ALTECH ECO – Near-To-Prime®



■ ALTECH ECO Feedstocks

Quality ECO = Start with Better Quality Feedstocks = Near-to-Prime®

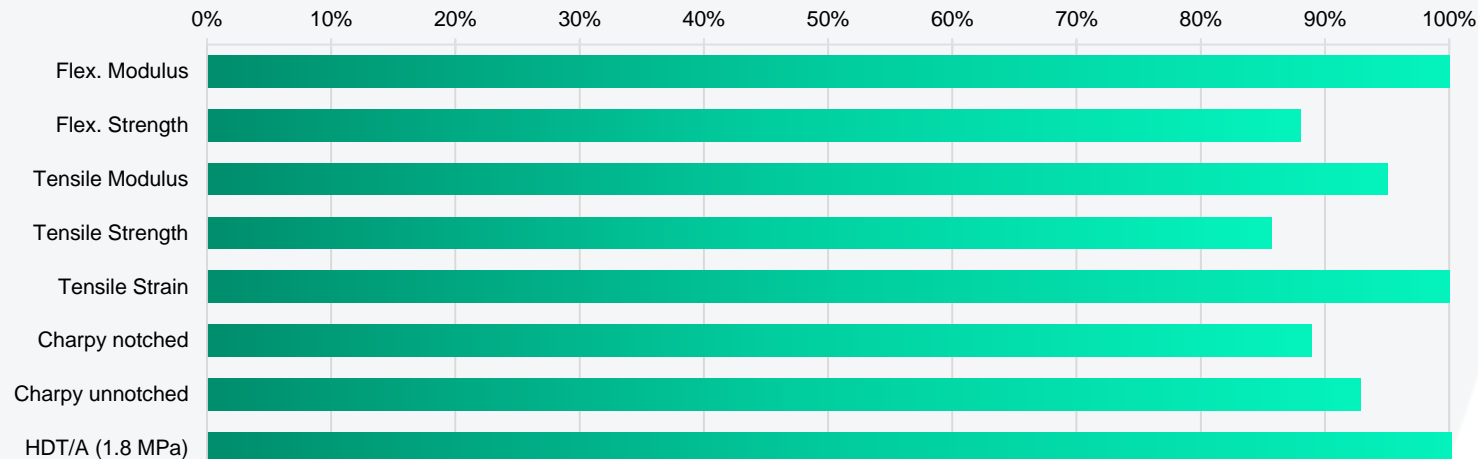


ALTECH ECO – Near-To-Prime®

■ ALTECH ECO

Utilizing recycle to provide excellent cost/ performance ratio to reach demanding Auto and E&E specifications

ALTECH PA66 ECO 2030/310 vs. PA66 GF30 prime



Technical Data Sheet

ALTECH® ECO
ALTECH PA66 ECO 2030/310 GF30 IM
 (Last update: 08.07.2018)

MOCOM

Base Polymer
 Filler/Additive System
 Special Features
 Market Segment
 Typical Applications

Polyamide 66
 30 % glass fibres
 high heat stabilised, impact modified
 Automotive, Machinery
 different automotive powertrain parts, housings, fans, machinery components

Pre-Drying Conditions

in a dry air (desiccant) dryer <80 °C
 for 2-12 h
 dependant on moisture content
 max. moisture content <0.12 %

Processing Conditions

injection moulding melt temperature 280-300 °C
 injection moulding mould temperature 80-120 °C

Storage

dry, protected from light

Properties

Value

Dimension

Test Norm

Mechanical Properties

Flexural modulus

8500

MPa

ISO 178

Flexural strength

245

MPa

ISO 178

Tensile modulus

9400

MPa

ISO 527

Tensile strength at break

160

MPa

ISO 527

Tensile elongation at break

3.7

%

ISO 527

Charpy impact strength 1eU

75

kJ/m²

ISO 1791eU

Charpy notched impact 1eA

11

kJ/m²

ISO 1791eA

Thermal Properties

HDT / A (1.8 MPa)

250

°C

ISO 75-1/-2

Rheological Properties

Shrinkage - lengthwise (24h)

0.3 - 0.5

%

ISO 294-4

Shrinkage - lateral (24h)

0.9 - 1.1

%

ISO 294-4

Physical Properties

Density

1350

kg/m³

ISO 1183

In general the existence of residual amounts of ferrous and non-ferrous metals cannot be completely ruled out in recycled feed stocks. In order to minimise potential negative effects of such inclusions, ALBIS employs extensive metal (and non-metal) detection and separation systems in the production of its ALTECH ECO compounds. However, even the highest product quality assurance processes cannot guarantee zero levels of ferrous and non-ferrous metal in the final product. To further reduce risk, moulders are therefore advised to deploy their own detection and separation techniques. In particular, special measures are advised to be employed with hot runner tasks. For any questions or advice concerning development of parts with ALTECH ECO grades please contact our TS&D department.

These are guide values and not a specification. The test values mentioned are representative values only and not binding minimum or maximum figures. These test values have been determined on standardised test specimens and can be affected by pigmentation, mould design and processing conditions.

Any information given on the chemical and physical characteristics of our products, including, without limitation, technical advice on

ALBIS Plastic Hamburg

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www.albis.com

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Fan Shrouds & Fan Wheels

Altech® ECO

- Automotive
- **ALTECH PA6 ECO 2025/509 BK14-950**
- Material Solution
 - High heat deflection temperature
 - High stiffness and strength
 - Stable material properties / quality, near to prime
 - Attractive cost / performance ratio
 - Sustainability due to recycled material appr. 8kg lower CO2 footprint vs comparable prime compound



Engine Cover

Altech® ECO

- Automotive
- **ALTECH PA6 ECO 4230/100**
- Material Solution
 - PA6 GF10 & MR20
 - Good surface quality
 - Improved shrinkage, less warpage
 - Good impact resistance

ALTECH® ECO

Near-to-Prime – Performance and Quality

- Near-to-prime performance and quality
- Low carbon footprint through recycling
- Tailor-made properties
- Easy processing
- Cost efficiency

ALTECH®

ALTECH® ECO

ALTECH PA6 A 4230/100		ALTECH PA6 ECO 4230/100	
7800	Tensile Modulus [MPa]	6000	
105	Tensile Strength at Break [MPa]	110	
2.5	Tensile Elongation at Break [%]	2.5	
5	Charpy Notched Impact [kJ/m²]	4	
45	Charpy Impact Strength [kJ/m²]	40	

BMW TwinPower Turbo

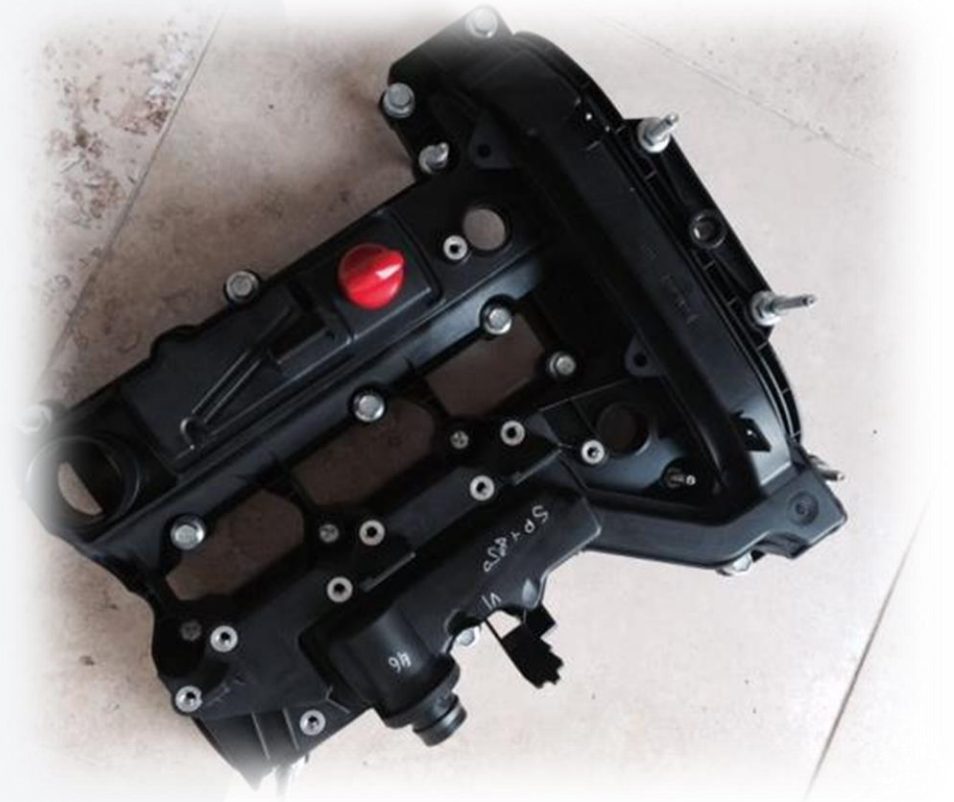
BMW TwinPower Turbo

Presentation @K2016

Engine Parts

Altech® ECO

- Automotive
- Cam Covers / Oil Pans / Vent Separator
- **ALTECH PA66 ECO 2035/500**
- Material Solution
 - PA6 GF35
 - High heat stabilized
 - Hot oil resistant
 - High stiffness and strength
 - Improved surface
 - Approved to OEM standards



Example picture

Housing Parts

Altech® ECO

- Automotive
- Instrument Bezel and Housings
- **ALTECH PC+ABS ECO 1000/500**
- Material Solution
 - Good long term thermal properties
 - Easy processing
 - Good gloss
 - Colors available



Example picture

Sustainability & Corporate Social Responsibility

- CSR
 - Environment
 - Labor Practices
 - Fair Business Practices
 - Sustainable Procurement
- #60 questions

ALBIS PLASTIC GMBH (GROUP)

Deutschland | Herstellung von chemischen Grundstoffen, Düngemitteln und Stickstoffverbindungen, Kunststoffen in Primärformen und synthetischem Kautschuk in Primärformen

Veröffentlichungsdatum: 11. Dez. 2019

Gültig bis: 11. Dez. 2020



48 /100
58.
Prozentrang

ECOVADIS - WHAT WE DO

Reliable CSR Ratings and Scorecards Covering 21 CSR Indicators, 190 commodities and 150 countries,

Built on 3 Pillars: People, Process and Platform

Summary

- Compounding excellence, innovation & know-how is at our core.
- We offer market leading specialty and custom compounds and Near-To-Prime® recycling solutions.
- Global production network with a strong technical customer facing team, industry focused.
- Corporate Social Responsibility (CSR)
- Part of the OTTO KRAHN Group.

“MOCOM will build on our strong history of customer collaboration, utilising over 50 years experience, to deliver a focused and exciting future.”

Your challenge is our ambition.

Thank you!

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