MICROTEC SRL

Biopolymer Compounds

- Technical Data Sheets -

BioComp®

Green Plastics

BioComp®

Green Plastics

100% Biodegradable Compound

Respect the Nature

BIOCOMP BF 01HP

Issue date:
September 2019

General Description

BioComp® is an innovative family of bioplastics made with components natural in origin utilizing biodegradable polymers obtained from both renewable materials and fossil fuel. Biodegradability and compostability of BioComp® is unchanged using plasticizers and the addition of organic and inorganic charges (such as plant fibres, cellulose, lignin, talc…).

General Information

All BioComp® formulations are made from polymeric resins extracted both from biomass and from synthetic polymers made from bio-derived monomers and microorganisms.
The major advantages of bioplastics BioComp® are:

- High content of natural (renewable) resource raw materials
- Outstanding mechanical properties (similar to LDPE and EVA depending on the grade)
- Wide processing window
- Processable on standard extrusion machinery with a high throughput
- Printability without corona treatment

Certification of Compostability and Biodegradability

BioComp® BF 01HP is a Biodegradable & compostable compound that contain starch.
Available certificates:

Certification body	Norm / Certification Scheme	Certification Number
TÜV AUSTRIA BELGIUM NV	OK Compost Industrial (EN13432)	TA8011802676
	OK Compost Home (EN13432)	O 17-2380-A

This brand ensures the absence of heavy metals and harmful substances in all BioComp® formulations. An excellent disintegration of the manufactured products and the ecotoxicity of the humus are assured and certified. The biodegradability of at least 90% is guaranteed within 6 months for industrial and 12 months for home.

Food Regulatory Status

BioComp® BF 01HP is one of the few biodegradable plastics, which complies in its composition with the European food stuff legislation for food contact as well as for food packaging. A detailed food law status is given in our specific certificates which are send on request to MICROTEC SRL. The converter must check the suitability of the article for the application.

Packaging and Storage

BioComp® BF 01HP resins are supplied in the form of granules inside a carton box. Temperatures during transportation and storage may not exceed 50 °C at any time. Changes in moisture content (either loss or gain depending on atmospheric conditions) should be avoided during longer term storage. Well packaged product should be stored under 23 °C and used within 3 months with LDPE liner bag or within 10 months with Aluminium liner bag. BioComp® BF 01HP should be stored in closed packaging in a cool, dry place out of direct sunlight. During production, once the bag has been open, exposure to the weather condition must be avoided for more than 5-6 hours. The unused material is recommended to seal it hermetically and to dry it 4 h to 80°C before subsequent reuse.

Quality control

BioComp® BF 01HP is produced as a standard material in a continuous production process. The melt flow index, MFI, at 190°C, 2,16 kg, according to ISO 1133 has been defined as specified parameter for quality control. A certificate can be provided with each lot number upon request. The BioComp® BF 01HP granules have to be pre-dried (4 hours at 80°C) before MFI measurement in order to obtain accurate values. Other data given in our literature are typical values, which are not part of our product specification for BioComp® BF 01HP.

Processing

BioComp® BF 01HP is an innovative type of bioplastic designed primarily for film blowing. BioComp® BF 01HP is processable on all conventional extrusion film blowing or casting lines with standard screw settings. Preferred screw design is a PE type. The information reported should be considered for general guideline in BioComp® BF 01HP processing. Fine tuning the film blowing process may be needed to obtain the optimum process parameters.
The following extrusion temperatures are recommended:

Processing Temperature Profile	Values
Feed zone temperature	140 – 150 °C
Melt zone temperature	150 – 160 °C
Die temperature	150 – 160 °C
Maximum temperature	170 °C
Melt temperature	150 – 160 °C

Operating Advice

Overheating of products should be avoided (due to degradation of the polymer). Before production, make sure that all temperature zones work correctly. Do not allow material to remain hot inside the extruder for extended periods as the material can degrade. Therefore, do not heat products over 160°C for long times and do not over 150°C when machine is not running. In case the machine used to run with other materials, high melting synthetic polymers (HDPE, PET, PVC, PA), it is recommended to use a correct transition thermoplastic polymer (LDPE with MFI of 4 – 8 g/10 min) and then reduce the temperature gradually to the required setting. The extruder can be usually purged for 10-20 minutes with low melting thermoplastic polymers using the above temperature settings. BioComp® is not compatible with masterbatches or synthetic or olefin additives; they can cause welding problems.

ATTENTION: Any addition of any other material (like other types of brands of biopolymer, colour biodegradable masterbatches, calcium carbonate-based fillers) could compromises the characteristics of biodegradability the physical-mechanical characteristics and aging and weldability of the original BioComp®. Therefore, with the addition of such materials, any quality disputes will not be accepted.
NOTE: We advise you to proceed with printing and welding in a short time, possibly just after extrusion, however within 3-4 days.

Application

BioComp® BF 01HP is an end compound suitable for film blowing applications and is specially developed for carrier bags. BioComp® BF 01HP is a good and sustainable alternative for PE bags and is a competitive alternative for currently used biodegradable plastic bags.

Technical Information

Classification Test Items	Test Method	Unit	Results
Density	ISO 1183	g/cm^3	1,27 – 1,30
MFI (190°C, 2,16 Kg, 10 min)	ISO 1133	190°C/10min	2,0 – 4,5
Moisture Content	AQUATRAC	%	< 0,2
Melting Point	DSC	°C	110 -130
Tensile Strenght - MD -	ISO 527	Mpa	28
Tensile Strenght - TD -	ISO 527	MPa	25
Tensile Elongation – MD -	ISO 527	%	380
Tensile Elongation – TD -	ISO 527	%	530
Elmendorf – MD -	ASTM D 1922-15	mN	1050
Elmendorf – TD -	ASTM D 1922-15	mN	1050
Dart Drop	ASTM D 1709-04	g	180

Disclaimer

BIOCOMP BF 6535

Issue date:
September 2019

General Description

BioComp® is an innovative family of bioplastics made with components natural in origin utilizing biodegradable polymers obtained from both renewable materials and fossil fuel. Biodegradability and compostability of BioComp® is unchanged using plasticizers and the addition of organic and inorganic charges (such as plant fibres, cellulose, lignin, talc…).

General Information

All BioComp® formulations are made from polymeric resins extracted both from biomass and from synthetic polymers made from bio-derived monomers and microorganisms.
The major advantages of bioplastics BioComp® are:

- High content of natural (renewable) resource raw materials
- Outstanding mechanical properties (similar to LDPE and EVA depending on the grade)
- Wide processing window
- Processable on standard extrusion machinery with a high throughput
- Printability without corona treatment

Certification of Compostability and Biodegradability

BioComp® BF 6535 is a Biodegradable & compostable compound that contains starch (50% BioBased).
Available certificates:

Certification body	Norm / Certification Scheme	Certification Number
TÜV AUSTRIA BELGIUM NV	OK Compost Industrial (EN13432)	TA8011802675
	OK Compost Home (EN13432)	O 17-2299-B

This brand ensures the absence of heavy metals and harmful substances in all BioComp® formulations. An excellent disintegration of the manufactured products and the ecotoxicity of the humus are assured and certified. The biodegradability of at least 90% is guaranteed within 6 months for industrial and 12 months for home.

Food Regulatory Status

BioComp® BF 6535 is one of the few biodegradable plastics, which complies in its composition with the European food stuff legislation for food contact as well as for food packaging. A detailed food law status is given in our specific certificates which are send on request to MICROTEC SRL. The converter must check the suitability of the article for the application.

Packaging and Storage

BioComp® BF 6535 resins are supplied in the form of granules inside a carton box. Temperatures during transportation and storage may not exceed 50 °C at any time. Changes in moisture content (either loss or gain depending on atmospheric conditions) should be avoided during longer term storage. Well packaged product should be stored under 23 °C and used within 3 months with LDPE liner bag or within 10 months with Aluminium liner bag. BioComp® BF 6535 should be stored in closed packaging in a cool, dry place out of direct sunlight. During production, once the bag has been open, exposure to the weather condition must be avoided for more than 5-6 hours. The unused material is recommended to seal it hermetically and to dry it 4 h to 80°C before subsequent reuse.

Quality control

BioComp® BF 6535 is produced as a standard material in a continuous production process. The melt flow index, MFI, at 190°C, 2,16 kg, according to ISO 1133 has been defined as specified parameter for quality control. A certificate can be provided with each lot number upon request. The BioComp® BF 6535 granules have to be pre-dried (4 hours at 80°C) before MFI measurement in order to obtain accurate values. Other data given in our literature are typical values, which are not part of our product specification for BioComp® BF 6535.

Processing

BioComp® BF 6535 is an innovative type of bioplastic designed primarily for film blowing. BioComp® BF 6535 is processable on all conventional extrusion film blowing or casting lines with standard screw settings. Preferred screw design is a PE type. The information reported should be considered for general guideline in BioComp® BF 6535 processing. Fine tuning the film blowing process may be needed to obtain the optimum process parameters.
The following extrusion temperatures are recommended:

Processing Temperature Profile	Values
Feed zone temperature	140 – 150 °C
Melt zone temperature	150 – 160 °C
Die temperature	150 – 160 °C
Maximum temperature	170 °C
Melt temperature	150 – 160 °C

Operating Advice

Overheating of products should be avoided (due to degradation of the polymer). Before production, make sure that all temperature zones work correctly. Do not allow material to remain hot inside the extruder for extended periods as the material can degrade. Therefore, do not heat products over 160°C for long times and do not over 150°C when machine is not running. In case the machine used to run with other materials, high melting synthetic polymers (HDPE, PET, PVC, PA), it is recommended to use a correct transition thermoplastic polymer (LDPE with MFI of 4 – 8 g/10 min) and then reduce the temperature gradually to the required setting. The extruder can be usually purged for 10-20 minutes with low melting thermoplastic polymers using the above temperature settings. BioComp® is not compatible with masterbatches or synthetic or olefin additives; they can cause welding problems.

ATTENTION: Any addition of any other material (like other types of brands of biopolymer, colour biodegradable masterbatches, calcium carbonate-based fillers) could compromises the characteristics of biodegradability the physical-mechanical characteristics and aging and weldability of the original BioComp®. Therefore, with the addition of such materials, any quality disputes will not be accepted.
NOTE: We advise you to proceed with printing and welding in a short time, possibly just after extrusion, however within 3-4 days.

Application

BioComp® BF 6535 is an end compound suitable for film blowing applications and is specially developed for carrier bags. BioComp® BF 6535 is a good and sustainable alternative for PE bags and is a competitive alternative for currently used biodegradable plastic bags.

Technical Information

Classification Test Items	Test Method	Unit	Results
Density	ISO 1183	g/cm^3	1,27 – 1,30
MFI (190°C, 2,16 Kg, 10 min)	ISO 1133	190°C/10min	2,0 – 4,5
Moisture Content	AQUATRAC	%	< 0,2
Melting Point	DSC	°C	110 -130
Tensile Strenght - MD -	ISO 527	Mpa	28
Tensile Strenght - TD -	ISO 527	MPa	25
Tensile Elongation – MD -	ISO 527	%	380
Tensile Elongation – TD -	ISO 527	%	530
Elmendorf – MD -	ASTM D 1922-15	mN	1050
Elmendorf – TD -	ASTM D 1922-15	mN	1050
Dart Drop	ASTM D 1709-04	g	180

Disclaimer

BIOCOMP BF 7210

Issue date:
September 2019

General Description

BioComp® is an innovative family of bioplastics made with components natural in origin utilizing biodegradable polymers obtained from both renewable materials and fossil fuel. Biodegradability and compostability of BioComp® is unchanged using plasticizers and the addition of organic and inorganic charges (such as plant fibres, cellulose, lignin, talc…).

General Information

All BioComp® formulations are made from polymeric resins extracted both from biomass and from synthetic polymers made from bio-derived monomers and microorganisms.
The major advantages of bioplastics BioComp® are:

- High content of natural (renewable) resource raw materials
- Outstanding mechanical properties (similar to LDPE and EVA depending on the grade)
- Wide processing window
- Processable on standard extrusion machinery with a high throughput
- Printability without corona treatment

Certification of Compostability and Biodegradability

BioComp® BF 7210 is a Biodegradable & compostable compound that contains mineral filler.
Available certificates:

Certification body	Norm / Certification Scheme	Certification Number
TÜV AUSTRIA BELGIUM NV	OK Compost Industrial (EN13432)	TA8011600654

This brand ensures the absence of heavy metals and harmful substances in all BioComp® formulations. An excellent disintegration of the manufactured products and the ecotoxicity of the humus are assured and certified. The biodegradability of at least 90% is guaranteed within six months.

Food Regulatory Status

BioComp® BF 7210 is one of the few biodegradable plastics, which complies in its composition with the European food stuff legislation for food contact as well as for food packaging. A detailed food law status is given in our specific certificates which are send on request to MICROTEC SRL. The converter must check the suitability of the article for the application.

Packaging and Storage

BioComp® BF 7210 resins are supplied in the form of granules inside a carton box. Temperatures during transportation and storage may not exceed 50 °C at any time. Changes in moisture content (either loss or gain depending on atmospheric conditions) should be avoided during longer term storage. Well packaged product should be stored under 23 °C and used within 3 months with LDPE liner bag or within 10 months with Aluminium liner bag. BioComp® BF 7210 should be stored in closed packaging in a cool, dry place out of direct sunlight. During production, once the bag has been open, exposure to the weather condition must be avoided for more than 5-6 hours. The unused material is recommended to seal it hermetically and to dry it 4 h to 80°C before subsequent reuse.

Quality control

BioComp® BF 7210 is produced as a standard material in a continuous production process. The melt flow index, MFI, at 190°C, 2,16 kg, according to ISO 1133 has been defined as specified parameter for quality control. A certificate can be provided with each lot number upon request. The BioComp® BF 7210 granules have to be pre-dried (4 hours at 80°C) before MFI measurement in order to obtain accurate values. Other data given in our literature are typical values, which are not part of our product specification for BioComp® BF 7210.

Processing

BioComp® BF 7210 is an innovative type of bioplastic designed primarily for film blowing. BioComp® BF 7210 is processable on all conventional extrusion film blowing or casting lines with standard screw settings. Preferred screw design is a PE type. The information reported should be considered for general guideline in BioComp® BF 7210 processing. Fine tuning the film blowing process may be needed to obtain the optimum process parameters.
The following extrusion temperatures are recommended:

Processing Temperature Profile	Values
Feed zone temperature	140 – 150 °C
Melt zone temperature	150 – 160 °C
Die temperature	150 – 160 °C
Maximum temperature	170 °C
Melt temperature	150 – 160 °C

Operating Advice

Overheating of products should be avoided (due to degradation of the polymer). Before production, make sure that all temperature zones work correctly. Do not allow material to remain hot inside the extruder for extended periods as the material can degrade. Therefore, do not heat products over 160°C for long times and do not over 150°C when machine is not running. In case the machine used to run with other materials, high melting synthetic polymers (HDPE, PET, PVC, PA), it is recommended to use a correct transition thermoplastic polymer (LDPE with MFI of 4 – 8 g/10 min) and then reduce the temperature gradually to the required setting. The extruder can be usually purged for 10-20 minutes with low melting thermoplastic polymers using the above temperature settings. BioComp® is not compatible with masterbatches or synthetic or olefin additives; they can cause welding problems.

ATTENTION: Any addition of any other material (like other types of brands of biopolymer, colour biodegradable masterbatches, calcium carbonate-based fillers) could compromises the characteristics of biodegradability the physical-mechanical characteristics and aging and weldability of the original BioComp®. Therefore, with the addition of such materials, any quality disputes will not be accepted.
NOTE: We advise you to proceed with printing and welding in a short time, possibly just after extrusion, however within 3-4 days.

Application

BioComp® BF 7210 is an end compound suitable for film blowing applications and is specially developed for carrier bags. BioComp® BF 7210 is a good and sustainable alternative for PE bags and is a competitive alternative for currently used biodegradable plastic bags.

Technical Information

Classification Test Items	Test Method	Unit	Results
Mass Density	ISO 1183	g/cm^3	1,38
MFI (190 °C, 2.16 Kg, 10 min)	ISO 1133	190°C/10min	3,0 – 5,5
Moisture Content	AQUATRAC	%	< 0.1
Tensile Strenght - MD -	ISO 527	Mpa	35,7
Tensile Strenght - TD -	ISO 527	MPa	25,7
Tensile Elongation – MD -	ISO 527	%	250
Tensile Elongation – TD -	ISO 527	%	610
Impact Resistance	UNI EN ISO 7765-1:2005	g	173
Static Load Resistance	UNI 11415:2011	type	B
Dynamic Load Resistance	UNI 11415:2011	type	B
Elmendorf – MD -	UNI EN ISO 6383-2:2005	N	0,4
Elmendorf – TD -	UNI EN ISO 6383-2:2005	N	2,3

Disclaimer

BIOCOMP BF 7210S

Issue date:
September 2019

General Description

BioComp® is an innovative family of bioplastics made with components natural in origin utilizing biodegradable polymers obtained from both renewable materials and fossil fuel. Biodegradability and compostability of BioComp® is unchanged using plasticizers and the addition of organic and inorganic charges (such as plant fibres, cellulose, lignin, talc…).

General Information

All BioComp® formulations are made from polymeric resins extracted both from biomass and from synthetic polymers made from bio-derived monomers and microorganisms.
The major advantages of bioplastics BioComp® are:

- High content of natural (renewable) resource raw materials
- Outstanding mechanical properties (similar to LDPE and EVA depending on the grade)
- Wide processing window
- Processable on standard extrusion machinery with a high throughput
- Printability without corona treatment

Certification of Compostability and Biodegradability

BioComp® BF 7210S is a Biodegradable & compostable compound that contain starch.
Available certificates:

Certification body	Norm / Certification Scheme	Certification Number
TÜV AUSTRIA BELGIUM NV	OK Compost Industrial (EN13432)	O 16-1905-B
CSI HIGH PERFORMANCE BIOPOLYMER	UNI 11415:2011	HPBY160001

This brand ensures the absence of heavy metals and harmful substances in all BioComp® formulations. An excellent disintegration of the manufactured products and the ecotoxicity of the humus are assured and certified. The biodegradability of at least 90% is guaranteed within six months.

Packaging and Storage

BioComp® BF 7210S resins are supplied in the form of granules inside a carton box. Temperatures during transportation and storage may not exceed 50 °C at any time. Changes in moisture content (either loss or gain depending on atmospheric conditions) should be avoided during longer term storage. Well packaged product should be stored under 23 °C and used within 3 months with LDPE liner bag or within 10 months with Aluminium liner bag.

BioComp® BF 7210S should be stored in closed packaging in a cool, dry place out of direct sunlight. During production, once the bag has been open, exposure to the weather condition must be avoided for more than 5-6 hours. The unused material is recommended to seal it hermetically and to dry it 4 h to 80°C before subsequent reuse.

Quality control

BioComp® BF 7210S is produced as a standard material in a continuous production process. The melt flow index, MFI, at 190°C, 2,16 kg, according to ISO 1133 has been defined as specified parameter for quality control. A certificate can be provided with each lot number upon request. The BioComp® BF 7210S granules have to be pre-dried (4 hours at 80°C) before MFI measurement in order to obtain accurate values. Other data given in our literature are typical values, which are not part of our product specification for BioComp® BF 7210S.

Processing

BioComp® BF 7210S is an innovative type of bioplastic designed primarily for film blowing. BioComp® BF 7210S is processable on all conventional extrusion film blowing or casting lines with standard screw settings. Preferred screw design is a PE type. The information reported should be considered for general guideline in BioComp® BF 7210S processing. Fine tuning the film blowing process may be needed to obtain the optimum process parameters.
The following extrusion temperatures are recommended:

Processing Temperature Profile	Values
Feed zone temperature	140 – 150 °C
Melt zone temperature	150 – 160 °C
Die temperature	150 – 160 °C
Maximum temperature	170 °C
Melt temperature	150 – 160 °C

Operating Advice

Overheating of products should be avoided (due to degradation of the polymer). Before production, make sure that all temperature zones work correctly. Do not allow material to remain hot inside the extruder for extended periods as the material can degrade. Therefore, do not heat products over 160°C for long times and do not over 150°C when machine is not running. In case the machine used to run with other materials, high melting synthetic polymers (HDPE, PET, PVC, PA), it is recommended to use a correct transition thermoplastic polymer (LDPE with MFI of 4 – 8 g/10 min) and then reduce the temperature gradually to the required setting. The extruder can be usually purged for 10-20 minutes with low melting thermoplastic polymers using the above temperature settings. BioComp® is not compatible with masterbatches or synthetic or olefin additives; they can cause welding problems.

ATTENTION: Any addition of any other material (like other types of brands of biopolymer, colour biodegradable masterbatches, calcium carbonate-based fillers) could compromises the characteristics of biodegradability the physical-mechanical characteristics and aging and weldability of the original BioComp®. Therefore, with the addition of such materials, any quality disputes will not be accepted.
NOTE: We advise you to proceed with printing and welding in a short time, possibly just after extrusion, however within 3-4 days.

Application

BioComp® BF 7210S is an end compound suitable for film blowing applications and is specially developed for carrier bags. BioComp® BF 7210S is a good and sustainable alternative for PE bags and is a competitive alternative for currently used biodegradable plastic bags.

Technical Information

Classification Test Items	Test Method	Unit	Results
Mass Density	ISO 1183	g/cm^3	1.38
MFI (190°C, 2.16 Kg, 10 min)	ISO 1133	190°C/10min	2,0 – 5,0
Moisture Content	AQUATRAC	%	< 0.1
Tensile Strenght - MD -	ISO 527	Mpa	26,3±1,9
Tensile Strenght - TD -	ISO 527	MPa	22,8±2,1
Tensile Elongation – MD -	ISO 527	%	353
Tensile Elongation – TD -	ISO 527	%	489
Static Load Resistance	UNI 11415:2011	Ballast 10 Kg	Test Passed
Dynamic Load Resistance	UNI 11415:2011	Ballast 5 Kg	Test Passed
Elmendorf – MD -	ASTM D 1922-15	mN	1082±58
Elmendorf – TD -	ASTM D 1922-15	mN	2227±120

Disclaimer

BIOCOMP BF 8515

Issue date:
September 2019

General Description

BioComp® is an innovative family of bioplastics made with components natural in origin utilizing biodegradable polymers obtained from both renewable materials and fossil fuel. Biodegradability and compostability of BioComp® is unchanged using plasticizers and the addition of organic and inorganic charges (such as plant fibres, cellulose, lignin, talc…).

General Information

All BioComp® formulations are made from polymeric resins extracted both from biomass and from synthetic polymers made from bio-derived monomers and microorganisms.
The major advantages of bioplastics BioComp® are:

- High content of natural (renewable) resource raw materials
- Outstanding mechanical properties (similar to LDPE and EVA depending on the grade)
- Wide processing window
- Processable on standard extrusion machinery with a high throughput
- Printability without corona treatment

Certification of Compostability and Biodegradability

BioComp® BF 8515 is a Biodegradable & compostable compound that contains mineral filler but does not contain starch.
Available certificates:

Certification body	Norm / Certification Scheme	Certification Number
TÜV AUSTRIA BELGIUM NV	OK Compost Industrial (EN13432)	Under Process

This brand ensures the absence of heavy metals and harmful substances in all BioComp® formulations. An excellent disintegration of the manufactured products and the ecotoxicity of the humus are assured and certified. The biodegradability of at least 90% is guaranteed within six months.

Food Regulatory Status

BioComp® BF 8515 is one of the few biodegradable plastics, which complies in its composition with the European food stuff legislation for food contact as well as for food packaging. A detailed food law status is given in our specific certificates which are send on request to MICROTEC SRL. The converter must check the suitability of the article for the application.

Packaging and Storage

BioComp® BF 8515 resins are supplied in the form of granules inside a carton box. Temperatures during transportation and storage may not exceed 50 °C at any time. Changes in moisture content (either loss or gain depending on atmospheric conditions) should be avoided during longer term storage. Well packaged product should be stored under 23 °C and used within 3 months with LDPE liner bag or within 10 months with Aluminium liner bag. BioComp® BF 8515 should be stored in closed packaging in a cool, dry place out of direct sunlight. During production, once the bag has been open, exposure to the weather condition must be avoided for more than 5-6 hours. The unused material is recommended to seal it hermetically and to dry it 4 h to 80°C before subsequent reuse.

Quality control

BioComp® BF 8515 is produced as a standard material in a continuous production process. The melt flow index, MFI, at 190°C, 2,16 kg, according to ISO 1133 has been defined as specified parameter for quality control. A certificate can be provided with each lot number upon request. The BioComp® BF 8515 granules have to be pre-dried (4 hours at 80°C) before MFI measurement in order to obtain accurate values. Other data given in our literature are typical values, which are not part of our product specification for BioComp® BF 8515.

Processing

BioComp® BF 8515 is an innovative type of bioplastic designed primarily for film blowing. BioComp® BF 8515 is processable on all conventional extrusion film blowing or casting lines with standard screw settings. Preferred screw design is a PE type. The information reported should be considered for general guideline in BioComp® BF 8515 processing. Fine tuning the film blowing process may be needed to obtain the optimum process parameters.
The following extrusion temperatures are recommended:

Processing Temperature Profile	Values
Feed zone temperature	140 – 150 °C
Melt zone temperature	150 – 160 °C
Die temperature	150 – 160 °C
Maximum temperature	170 °C
Melt temperature	150 – 160 °C

Operating Advice

Overheating of products should be avoided (due to degradation of the polymer). Before production, make sure that all temperature zones work correctly. Do not allow material to remain hot inside the extruder for extended periods as the material can degrade. Therefore, do not heat products over 160°C for long times and do not over 150°C when machine is not running. In case the machine used to run with other materials, high melting synthetic polymers (HDPE, PET, PVC, PA), it is recommended to use a correct transition thermoplastic polymer (LDPE with MFI of 4 – 8 g/10 min) and then reduce the temperature gradually to the required setting. The extruder can be usually purged for 10-20 minutes with low melting thermoplastic polymers using the above temperature settings. BioComp® is not compatible with masterbatches or synthetic or olefin additives; they can cause welding problems.

ATTENTION: Any addition of any other material (like other types of brands of biopolymer, colour biodegradable masterbatches, calcium carbonate-based fillers) could compromises the characteristics of biodegradability the physical-mechanical characteristics and aging and weldability of the original BioComp®. Therefore, with the addition of such materials, any quality disputes will not be accepted.
NOTE: We advise you to proceed with printing and welding in a short time, possibly just after extrusion, however within 3-4 days.

Application

BioComp® BF 8515 is an end compound suitable for film blowing applications and is specially developed for carrier bags. BioComp® BF 8515 is a good and sustainable alternative for PE bags and is a competitive alternative for currently used biodegradable plastic bags.

Technical Information

Classification Test Items	Test Method	Unit	Results
Mass Density	ISO 1183	g/cm^3	1,24 ± 0.02
MFI (190 °C, 2.16 Kg, 10 min)	ISO 1133	190°C/10min	4,0 – 7,0
Moisture Content	AQUATRAC	%	< 0.1
Tensile Strenght - MD -	ISO 527	Mpa	35,7
Tensile Strenght - TD -	ISO 527	MPa	25,7
Tensile Elongation – MD -	ISO 527	%	250
Tensile Elongation – TD -	ISO 527	%	610
Impact Resistance	UNI EN ISO 7765-1:2005	g	173
Static Load Resistance	UNI 11415:2011	type	B
Dynamic Load Resistance	UNI 11415:2011	type	B
Elmendorf – MD -	UNI EN ISO 6383-2:2005	N	0,4
Elmendorf – TD -	UNI EN ISO 6383-2:2005	N	2,3

Disclaimer

BIOCOMP IM 23068

Issue date:
September 2019

General Description

BioComp® is an innovative family of bioplastics made with components natural in origin utilizing biodegradable polymers obtained from both renewable materials and fossil fuel. Biodegradability and compostability of BioComp® are unchanged using natural plasticizers and the addition of organic and inorganic charges (such as plant fibres, cellulose, lignin, talc…).
BioComp IM 23068 is a biodegradable formulation specific for injection molding and extrusion. It is optimal for food contact applications such as the production of knives, forks, flats, spoons, glass frame, straws, food tray and toys. BioComp IM 23068 shows excellent properties.

General Information

All BioComp® formulations are made from polymeric resins extracted both from biomass and from synthetic polymers made from bio-derived monomers and microorganisms.
The major advantages of bioplastics BioComp® are:

- High content of natural (renewable) resource raw materials
- Outstanding mechanical properties
- Wide processing window
- Processable on standard extrusion machinery with a high throughput

Certification of Compostability and Biodegradability

BioComp® IM 23068 is a Biodegradable & compostable compound that contains Bio-polyester and natural fillers.
Available certificates:

Certification body	Norm / Certification Scheme	Certification Number
TÜV AUSTRIA BELGIUM NV	OK Compost Industrial (EN13432)	TA8011802878

This brand ensures the absence of heavy metals and harmful substances in all BioComp® formulations. An excellent disintegration of the manufactured products and the ecotoxicity of the humus are assured and certified. The biodegradability of at least 90% is guaranteed within six months.

Food Regulatory Status

BioComp® IM 23068 is one of the few biodegradable plastics, which complies in its composition with the European food stuff legislation for food contact as well as for food packaging. A detailed food law status is given in our specific certificates which are send on request to MICROTEC SRL. The converter must check the suitability of the article for the application.

Packaging and Storage

BioComp® IM 23068 resins are supplied in the form of granules inside a carton box. Temperatures during transportation and storage may not exceed 50 °C at any time. Changes in moisture content (either loss or gain depending on atmospheric conditions) should be avoided during longer term storage. Well packaged product should be stored under 23 °C and used within 3 months with LDPE liner bag or within 10 months with Aluminium liner bag. BioComp® IM 23068 should be stored in closed packaging in a cool, dry place out of direct sunlight. During production, once the bag has been open, exposure to the weather condition must be avoided for more than 5-6 hours. The unused material is recommended to seal it hermetically and to dry it 4 h to 80°C before subsequent reuse.

Quality control

BioComp® IM 23068 is produced as a standard material in a continuous production process. The melt flow index, MFI, at 190°C, 2,16 kg, according to ISO 1133 has been defined as specified parameter for quality control. A certificate can be provided with each lot number upon request. The BioComp® IM 23068 granules have to be pre-dried (4 hours at 80°C) before MFI measurement in order to obtain accurate values. Other data given in our literature are typical values, which are not part of our product specification for BioComp® IM 23068.

Processing

BioComp® IM 23068 is an innovative type of bioplastic designed primarily for injection molding and extrusion. BioComp® IM 23068 is processable on all conventional injection or sheet extrusion lines with standard screw settings. Preferred screw design is a PE type. The information reported should be considered for general guideline in BioComp® IM 23068 processing. The following extrusion temperatures are recommended:

Setting		**Start Point**	**Range**
Barrel Zone Temperature	Feed	120°C	
	Rear	190°C	180 – 220°C
	Center	200°C	180 – 220°C
	Front	210°C	180 – 220°C
Processing Temp. Limit		230 °C	
Injection Speed		Slow to Moderate	
Packing Time		4 -15 s	9 - 20 s
Cooling Time		3 – 14 s	
Back Pressure		5 -30 bar	
Pre-Dry Requirements		80 °C; 4 h	

Operating Advice

Overheating of products should be avoided (due to degradation of the polymer). Before production, make sure that all temperature zones work correctly. Do not allow material to remain hot inside the extruder for extended periods as the material can degrade. Therefore, do not heat products over 235°C for long times and do not over 150°C when machine is not running. In case the machine used to run with other materials, high melting synthetic polymers (HDPE, PET, PVC, PA), it is recommended to use a correct transition thermoplastic polymer (LDPE with MFI of 4 – 8 g/10 min) and then reduce the temperature gradually to the required setting. The extruder can be usually purged for 10-20 minutes with low melting thermoplastic polymers using the above temperature settings. BioComp® is not compatible with masterbatches or synthetic or olefin additives; they can cause welding problems.

ATTENTION: Any addition of any other material (like other types of brands of biopolymer, colour biodegradable masterbatches, calcium carbonate-based fillers) could compromises the characteristics of biodegradability the physical-mechanical characteristics and aging and weldability of the original BioComp®. Therefore, with the addition of such materials, any quality disputes will not be accepted.

Application

BioComp® IM 23068 is an end compound suitable for injection and extrusion applications. It was designed such as cutlery, glass frame, straws, coffee cup, etc.

Technical Information

Properties	Standard	Test Condition	Unit	Typical Values [2]
Mechanical Properties				
Tensile Strength	ISO 527-2	50 mm/min	MPa	57
Elongation	ISO 527-2	50 mm/min	%	2
Young Modulus	ISO 527-2	50 mm/min	MPa	8143
Flexural Strength	ISO 178	2 mm/min	MPa	86
Flexural Modulus	ISO 178	2 mm/min	MPa	7486
Impact Strength, IZOD notched	ISO 180	23°C	J/m	3
Charpy impact resistance, un-notched	ISO 179	23°C	KJ/m^2	19
Charpy impact resistance, notched	ISO 179	23°C	KJ/m^2	2
Thermal				
Heat Distortion Temp.	ISO 75-1	0,45 MPa; 6,4 mm	°C	50
Others				
Melt Flow Rate	ISO 1133	190°C; 2,16kg	g/10 min	22-25
Specific Gravity	ISO 1183	23°C	g/cm^3	1,44 – 1.47
Mold Shrinkage	ASTM D955	23°C	%	0,1 – 0,5
Color	White			

Retreating Conditions (Anneal)

The listed values are measured by test specification and used for referential purpose only.

Annealing Temp. (°C)	Annealing Time (s)	Start Point (°C)	Range (°C)
110	60 ~ 180	90	88 ~ 92
120	60 ~ 180	92	90 ~ 95
130	60 ~ 180	95	92 ~ 98

Disclaimer

BIOCOMP IM 95HD

Issue date:
September 2019

General Description

BioComp® is an innovative family of bioplastics made with components natural in origin utilizing biodegradable polymers obtained from both renewable materials and fossil fuel. Biodegradability and compostability of BioComp® are unchanged using natural plasticizers and the addition of organic and inorganic charges (such as plant fibres, cellulose, lignin, talc…).
BioComp IM 95HD is a biodegradable formulation specific for injection molding and extrusion. It is optimal for food contact applications such as the production of knives, forks, flats, spoons, glass frame, straws, food tray and toys. BioComp IM 95HD shows excellent properties.

General Information

All BioComp® formulations are made from polymeric resins extracted both from biomass and from synthetic polymers made from bio-derived monomers and microorganisms.
The major advantages of bioplastics BioComp® are:

- High content of natural (renewable) resource raw materials
- Outstanding mechanical properties
- Wide processing window
- Processable on standard extrusion machinery with a high throughput

Certification of Compostability and Biodegradability

BioComp® IM 95HD is a Biodegradable & compostable compound that contains Bio-polyester and natural fillers.
Available certificates:

Certification body	Norm / Certification Scheme	Certification Number
TÜV AUSTRIA BELGIUM NV	OK Compost Industrial (EN13432)	Under process

This brand ensures the absence of heavy metals and harmful substances in all BioComp® formulations. An excellent disintegration of the manufactured products and the ecotoxicity of the humus are assured and certified. The biodegradability of at least 90% is guaranteed within six months.

Food Regulatory Status

BioComp® IM 95HD is one of the few biodegradable plastics, which complies in its composition with the European food stuff legislation for food contact as well as for food packaging. A detailed food law status is given in our specific certificates which are send on request to MICROTEC SRL. The converter must check the suitability of the article for the application.

Packaging and Storage

BioComp® IM 95HD resins are supplied in the form of granules inside a carton box. Temperatures during transportation and storage may not exceed 50 °C at any time. Changes in moisture content (either loss or gain depending on atmospheric conditions) should be avoided during longer term storage. Well packaged product should be stored under 23 °C and used within 3 months with LDPE liner bag or within 10 months with Aluminium liner bag. BioComp® IM 95HD should be stored in closed packaging in a cool, dry place out of direct sunlight. During production, once the bag has been open, exposure to the weather condition must be avoided for more than 5-6 hours. The unused material is recommended to seal it hermetically and to dry it 4 h to 80°C before subsequent reuse.

Quality control

BioComp® IM 95HD is produced as a standard material in a continuous production process. The melt flow index, MFI, at 190°C, 2,16 kg, according to ISO 1133 has been defined as specified parameter for quality control. A certificate can be provided with each lot number upon request. The BioComp® IM 95HD granules have to be pre-dried (4 hours at 80°C) before MFI measurement in order to obtain accurate values. Other data given in our literature are typical values, which are not part of our product specification for BioComp® IM 95HD.

Processing

BioComp® IM 95HD is an innovative type of bioplastic designed primarily for injection molding and extrusion. BioComp® IM 95HD is processable on all conventional injection or sheet extrusion lines with standard screw settings. Preferred screw design is a PE type. The information reported should be considered for general guideline in BioComp® IM 95HD processing. The following extrusion temperatures are recommended:

Setting		**Start Point**	**Range**
Barrel Zone Temperature	Feed	120°C	
	Rear	190°C	180 – 220°C
	Center	200°C	180 – 220°C
	Front	210°C	180 – 220°C
Processing Temp. Limit		230 °C	
Injection Speed		Slow to Moderate	
Packing Time		4 -15 s	9 - 20 s
Cooling Time		3 – 14 s	
Back Pressure		5 -30 bar	
Pre-Dry Requirements		80 °C; 4 h	

Operating Advice

Overheating of products should be avoided (due to degradation of the polymer). Before production, make sure that all temperature zones work correctly. Do not allow material to remain hot inside the extruder for extended periods as the material can degrade. Therefore, do not heat products over 235°C for long times and do not over 150°C when machine is not running. In case the machine used to run with other materials, high melting synthetic polymers (HDPE, PET, PVC, PA), it is recommended to use a correct transition thermoplastic polymer (LDPE with MFI of 4 – 8 g/10 min) and then reduce the temperature gradually to the required setting. The extruder can be usually purged for 10-20 minutes with low melting thermoplastic polymers using the above temperature settings. BioComp® is not compatible with masterbatches or synthetic or olefin additives; they can cause welding problems.

ATTENTION: Any addition of any other material (like other types of brands of biopolymer, colour biodegradable masterbatches, calcium carbonate-based fillers) could compromises the characteristics of biodegradability the physical-mechanical characteristics and aging and weldability of the original BioComp®. Therefore, with the addition of such materials, any quality disputes will not be accepted.

Application

BioComp® IM 95HD is an end compound suitable for injection and extrusion applications. It was designed such as cutlery, glass frame, straws, coffee cup, etc.

Technical Information

Properties	Standard	Test Condition	Unit	Typical Values [2]
Mechanical Properties				
Tensile Strength	ISO 527-2	50 mm/min	MPa	42.1
Elongation	ISO 527-2	50 mm/min	%	3,5
Young Modulus	ISO 527-2	50 mm/min	MPa	3881
Flexural Strength	ISO 178	2 mm/min	MPa	66
Flexural Modulus	ISO 178	2 mm/min	MPa	3675
Impact Strength, IZOD notched	ISO 180	23°C	J/m	30
Charpy impact resistance, un-notched	ISO 179	23°C	KJ/m^2	30
Charpy impact resistance, notched	ISO 179	23°C	KJ/m^2	3
Thermal				
Heat Distortion Temp.	ISO 75-1	0,45 MPa; 6,4 mm	°C	90
Others				
Melt Flow Index	ISO 1133	190°C; 2,16kg	g/10 min	6-8
Specific Gravity	ISO 1183	23°C	g/cm^3	1,40 – 1.50
Mold Shrinkage	ASTM D955	23°C	%	0,1 – 0,5
Colour	Light grey			

Disclaimer

BIOCOMP "Flex01"

Issue date:
September 2019

General Description

BioComp® is an innovative family of bioplastics made with components natural in origin utilizing biodegradable polymers obtained from both renewable materials and fossil fuel. Biodegradability and compostability of BioComp® is unchanged using natural plasticizers and the addition of organic and inorganic charges (such as plant fibres, cellulose, lignin, talc…).
BioComp "Flex01" is a biodegradable formulation specific for injection molding and extrusion. It is optimal for food contact applications, medium heat distortion temperature as the production of knives, forks, flats, spoons, eyeglasses frame, straws, food tray and toys. BioComp "Flex01" shows excellent properties and yellowish transparent.

General Information

All BioComp® formulations are made from polymeric resins extracted both from biomass and from synthetic polymers made from bio-derived monomers.
The major advantages of bioplastics BioComp® are:

- High content of natural (renewable) resource raw materials
- Outstanding mechanical properties
- Wide processing window
- Processable on standard extrusion machinery with a high throughput

Certification of Compostability and Biodegradability

BioComp® "Flex01" is a Biodegradable & compostable compound.
Available certificates:

Certification body	Norm / Certification Scheme	Certification Number
TÜV AUSTRIA BELGIUM NV	OK Compost Industrial (EN13432)	Under process
	OK Compost Home (EN13432)	Under process

This brand ensures the absence of heavy metals and harmful substances in all BioComp® formulations. An excellent disintegration of the manufactured products and the ecotoxicity of the humus are assured and certified. The biodegradability of at least 90% is guaranteed within 6 months for industrial and 12 months for home.

Food Regulatory Status

BioComp® "Flex01" is one of the few biodegradable plastics, which complies in its composition with the European food stuff legislation for food contact as well as for food packaging. A detailed food law status is given in our specific certificates which are send on request to MICROTEC SRL. The converter must check the suitability of the article for the application.

Packaging and Storage

BioComp® "Flex01" resins are supplied in the form of granules inside a carton box. Temperatures during transportation and storage may not exceed 50 °C at any time. Changes in moisture content (either loss or gain depending on atmospheric conditions) should be avoided during longer term storage. Well packaged product should be stored under 23 °C and used within 3 months with LDPE liner bag or within 10 months with Aluminium liner bag. BioComp® "Flex01" should be stored in closed packaging in a cool, dry place out of direct sunlight. During production, once the bag has been open, exposure to the weather condition must be avoided for more than 5-6 hours. The unused material is recommended to seal it hermetically and to dry it 4 h to 80°C before subsequent reuse.

Quality control

BioComp® "Flex01" is produced as a standard material in a continuous production process. The melt flow index, MFI, at 210°C, 2,16 kg, according to ISO 1133 has been defined as specified parameter for quality control. A certificate can be provided with each lot number upon request. The BioComp® "Flex01" granules have to be pre-dried (4 hours at 80°C) before MFI measurement in order to obtain accurate values. Other data given in our literature are typical values, which are not part of our product specification for BioComp® Flex01".

Processing

BioComp® "Flex01" is an innovative type of bioplastic designed primarily for injection molding and extrusion. BioComp® "Flex01" is processable on all conventional injection or sheet extrusion lines with standard screw settings. Preferred screw design is a PE type. The information reported should be considered for general guideline in BioComp® "Flex01" processing. The following extrusion temperatures are recommended:

Setting		**Start Point**	**Range**
Barrel Zone Temperature	Feed	120°C	
	Rear	190°C	180 – 220°C
	Center	200°C	180 – 220°C
	Front	210°C	180 – 220°C
Processing Temp. Limit		235 °C	
Injection Speed		Slow to Moderate	
Packing Time		4 -15 s	9 - 20 s
Cooling Time		3 – 14 s	
Back Pressure		5 -30 bar	
Pre-Dry Requirements		80 °C; 4 h	

Operating Advice

Overheating of products should be avoided (due to degradation of the polymer). Before production, make sure that all temperature zones work correctly. Do not allow material to remain hot inside the extruder for extended periods as the material can degrade. Therefore, do not heat products over 235°C for long times and do not over 150°C when machine is not running. In case the machine used to run with other materials, high melting synthetic polymers (HDPE, PET, PVC, PA), it is recommended to use a correct transition thermoplastic polymer (LDPE with MFI of 4 – 8 g/10 min) and then reduce the temperature gradually to the required setting. The extruder can be usually purged for 10-20 minutes with low melting thermoplastic polymers using the above temperature settings. BioComp® is not compatible with masterbatches or synthetic or olefin additives.

ATTENTION: Any addition of any other material (like other types of brands of biopolymer, colour biodegradable masterbatches, calcium carbonate-based fillers) could compromises the characteristics of biodegradability the

physical-mechanical characteristics and aging and weldability of the original BioComp®. Therefore, with the addition of such materials, any quality disputes will not be accepted.

Application

BioComp® "Flex01" is an end compound suitable for injection and extrusion applications. It was designed for medium heat distortion temperature application as the production of disposable plastic.

Technical Information

Properties	Standard	Test Condition	Unit	Typical Values [2]
Mechanical Properties				
Tensile Strength	ISO 527-2	50 mm/min	MPa	34.2
Elongation	ISO 527-2	50 mm/min	%	18.1
Young Modulus	ISO 527-2	50 mm/min	MPa	1790
Flexural Strength	ISO 178	2 mm/min	MPa	35
Flexural Modulus	ISO 178	2 mm/min	MPa	1274
Impact Strength, IZOD notched	ISO 180	23°C	J/m	20
Charpy impact resistance, un-notched	ISO 179	23°C	KJ/m^2	120
Charpy impact resistance, notched	ISO 179	23°C	KJ/m^2	18
Thermal				
Heat Distortion Temp.	ISO 75-1	0,45 MPa; 6,4 mm	°C	70
Others				
Melt Flow Rate	ISO 1133	210°C; 2,16kg	g/10 min	7.30
Specific Gravity	ISO 1183	23°C	g/cm^3	1,27
Mold Shrinkage	ASTM D955	23°C	%	0,1 – 0,5
Colour	Yellowish Transparent			

Disclaimer

The information contained in this Product Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. The information provided herein is based on technical data that Microtec srl believes to be reliable, however Microtec srl makes no representation or warranty as to the completeness or accuracy therefore and Microtec srl assumes no liability resulting from its use or for any claims, losses, or damages of any third party. Recipients receiving this information must exercise their own judgement as to the appropriateness of its use, and it is the user's responsibility to assess the material's suitability (including safety) for a particular purpose prior to such use.

BioComp®
Green Plastics

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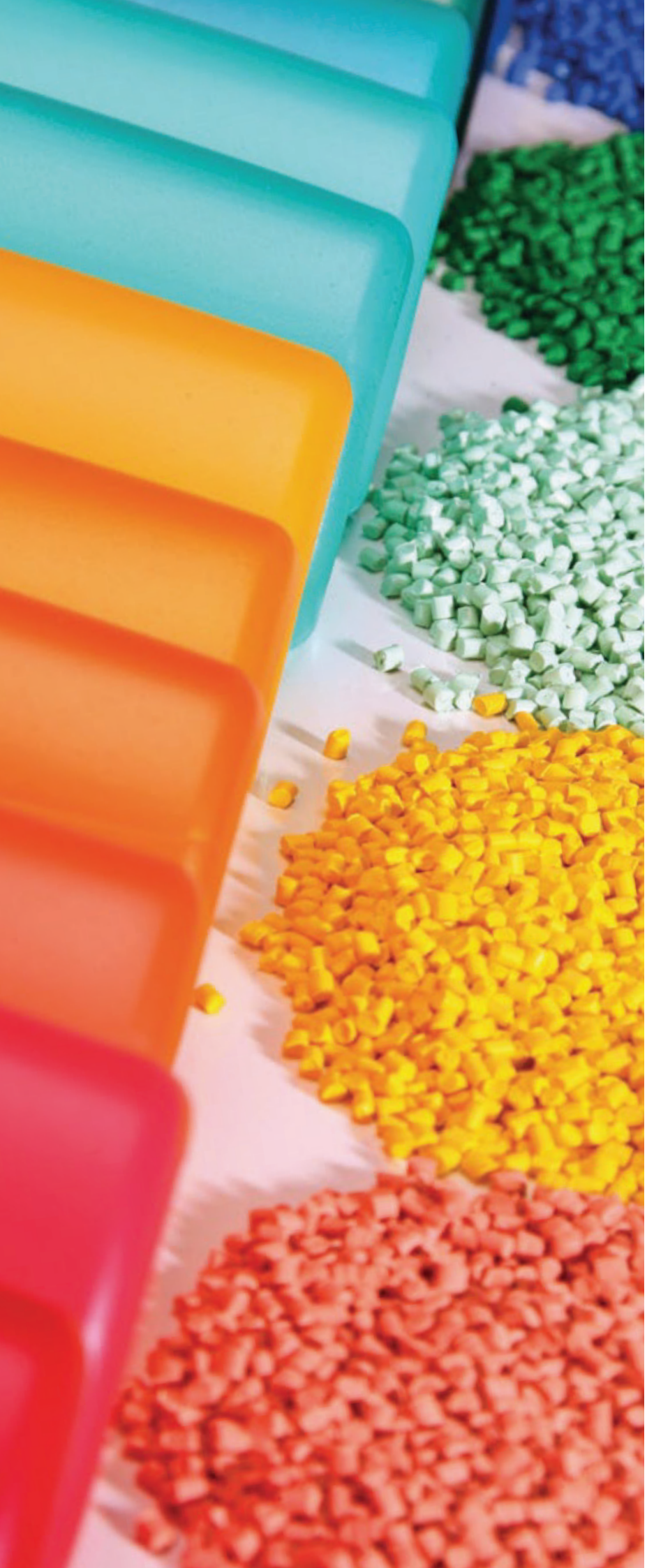

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