



» PRODUCT BULLETIN

Maxxam™ BIO Bio-Based Polyolefin Formulations

Maxxam™ BIO polyolefins are formulated with bio-based polyolefin resin and/or 10–50% natural filler from renewable plant sources, including olive seed based powder and cellulose fiber. They offer a more sustainable alternative to standard polyolefin grades while achieving equivalent performance including good stiffness, durability, impact resistance and UV stability.

Maxxam BIO polyolefins can be fully customized to meet specific application needs. To satisfy required performance characteristics they can be filled and reinforced with glass fiber, minerals, impact modifiers, colorants and stabilizer systems.

They offer a good surface finish and, depending on filler source can offer a unique aesthetic. Food contact compliant grades are also available.

KEY CHARACTERISTICS

Formulated with bio-based resin and/or 10–50% filler from renewable plant sources, Maxxam BIO formulations:

- Reduce product carbon footprint
- Achieve equivalent performance to standard polyolefin formulations
- Provide good stiffness, durability, impact resistance and UV stability
- Deliver good surface finish and are easy to color
- Enable customized performance characteristics depending on application need
- Offer food contact compliance

MARKETS AND APPLICATIONS

Maxxam BIO formulations are suitable for use across many industries and applications where traditional polyolefin materials are used, including:

- **Transportation Interior Applications** - Decorative profiles, trunk side liners, pillars, T-cup
- **Industrial** - Structural parts, furniture
- **Consumer** - Household goods, personal care items, packaging, office supplies, food contact applications
- **Electrical and Electronic** - Housings, buttons, junction boxes

SUSTAINABILITY BENEFITS

- Formulated with bio-based resin and/or 10–50% natural filler
- Utilize natural filler from renewable plant sources including olive seed based powder and cellulose fiber
- Offer a lower product carbon footprint compared to traditional petroleum-based feedstock
- Can be recycled at end of life

MAXXAM BIO POLYOLEFINS – BIO-BASED RESIN – TECHNICAL PERFORMANCE

CHARACTERISTICS	UNITS	Maxxam BIO MX5200-5036 Natural FD	Maxxam BIO MX5200-5030 Natural FD	Maxxam BIO MX5200-5030 Natural FD X1	Maxxam BIO MX5200-5001 RS HS Natural	Maxxam BIO MX5200-5033 RS HS Natural	Maxxam BIO MX5200-5034 RS HS Natural	Maxxam BIO MX5200-5035 RS HS Natural
Filler/Reinforcement		Unfilled	Unfilled	Unfilled	30% Glass Fiber	10% Mineral	20% Mineral	30% Mineral
Density (ISO 1183)	g/cm	0.90	0.90	0.90	1.12	0.96	1.03	1.12
Tensile Modulus (ISO 527-1) @ 23°C	MPa	1500	1000	1000	6400	1350	1650	2100
Tensile Stress (ISO 527-2) @ 23°C	MPa	27.0	20.0	20.0	75.0	13.0	14.0	15.0
Tensile Strain at Break (ISO 527-2) @ 23°C	%	5	50	50	3.0	50	37	18
Charpy Notched (ISO 179)	kJ/m	5	20	25	10	12	10	10

MAXXAM BIO POLYOLEFINS – OLIVE SEED BASED FILLER – TECHNICAL PERFORMANCE

CHARACTERISTICS	UNITS	Maxxam BIO MX5200-5023 RS HS HI Natural 70	Maxxam BIO MX5200-5025 RS HS Natural 70	Maxxam BIO MX5200-5004 RS HS Natural 70	Maxxam BIO MX5200-5003 RS Natural 70	Maxxam BIO MX5200-5009 RS HS Natural 70	Maxxam BIO MX5200-5024 RS HS Natural 70	Maxxam BIO MX5200-5022 RS HS Natural 70
Filler/Reinforcement		15% Olive Seed Based	25% Olive Seed Based	30% Olive Seed Based/ 10% Mineral	35% Olive Seed Based/ 5% Mineral	15% Olive Seed Based/ 17% Glass Fiber/ Mineral	20% Olive Seed Based/ 20% Glass/ Mineral	10% Olive Seed Based/ 20% Mineral
Density (ISO 1183)	g/ccm	1.00	1.15	1.10	1.07	1.09	1.25	1.10
Tensile Modulus (ISO 527-1) @ 23°C	MPa	1750	2000	2700	2500	3800	3500	4100
Tensile Stress at Break (ISO 527-2) @ 23°C	MPa	21.0	20.0	30.0	20.0	40.0	35.0	42.0
Tensile Strain at Break (ISO 527-2) @ 23°C	%	24	5	3	5	3	4	2
Notched Izod (ISO 180)	kJ/m	15	7	3	2	5	15	7



MAXXAM BIO POLYOLEFINS – CELLULOSE FIBER FILLER – TECHNICAL PERFORMANCE

CHARACTERISTICS	UNITS	Maxxam BIO MX5200-5029 NF HI UV Black X1	Maxxam BIO MX5200-5032 NFS UV Natural	Maxxam BIO MX5200-5020 NF/NFS UV Natural X1	Maxxam BIO MX5200-5016 NF Natural
Filler/Reinforcement		10% Cellulose Fiber	20% Cellulose Fiber	30% Cellulose Fiber	40% Cellulose Fiber
Density (ISO 1183)	g/ccm	0.95	1.00	1.02	1.07
Tensile Modulus ISO 527-1) @ 23°C	MPa	1550	1750	2640	3600
Tensile Stress at Break (ISO 527-2) @ 23°C	MPa	33	30	48	55
Tensile Strain at Break (ISO 527-2) @ 23°C	%	8	12	9	4
Charpy Notched Impact Strength (ISO 179/1eA)	kJ/m ²	5	6	5	5
Charpy Unnotched Impact Strength (ISO 179/1eU)	kJ/m ²	33	49	38	30





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