

Alumide

PA12-MED(AI)

EOS GmbH - Electro Optical Systems

| Shore D hardness 76 - | Test Standard |
|--|---------------------------------|
| The properties of parts manufactured using additive manufacturing technology (e.g. laser sintering, stereolithography, Fused Depodue to their layer-by-layer production, to some extent direction dependent. This has to be considered when designing the part and Tensile Modulus X Direction 3800 MPa Y Direction 3800 MPa Y Direction 48 MPa Strain at break (X Direction) 49 Charpy impact strength (+23°C, X Direction) 29 kJ/m² Charpy notched impact strength (+23°C, X Direction) 4.6 kJ/m² Flexural Modulus (23°C, X Direction) 72 MPa Temp. of deflection under load 1.80 MPa, X Direction 175 °C Volume resistivity (X Direction) 3E12 Ohm*m Thermal properties Value Unit Melting temperature (20°C/min) 175 °C Vicat softening temperature (50°C/h 50N) 169 °C Electrical properties Value Unit Relative permittivity 100Hz 10Hz 110Hz | ISO 7619-1 |
| The properties of parts manufactured using additive manufacturing technology (e.g. laser sintering, stereolithography, Fused Depodue to their layer-by-layer production, to some extent direction dependent. This has to be considered when designing the part and Tensile Modulus X Direction 3800 MPa Y Direction 3800 MPa Y Direction 48 MPa Y Direction 48 MPa Y Direction 48 MPa Y Direction 48 MPa Strain at break (X Direction) 4 % Charpy impact strength (+23°C, X Direction) 4 % Charpy notched impact strength (+23°C, X Direction) 4 % Charpy notched impact strength (+23°C, X Direction) 4 % Charpy notched impact strength (+23°C, X Direction) 4 % Charpy notched impact strength (+23°C, X Direction) 4 % Charpy notched impact strength (+23°C, X Direction) 4 % Charpy notched impact strength (+23°C, X Direction) 7 MPa Temp. of deflection under load 1.80 MPa, X Direction 1 144 °C 0.45 MPa, X Direction 1 175 °C Volume resistivity (X Direction) 3 E12 Ohm*m Thermal properties Value Unit Melting temperature (20°C/min) 1 75 °C Vicat softening temperature (50°C/h 50N) 1 69 °C Electrical properties Value Unit Relative permittivity 1 00Hz 1 13 - 1 14 | |
| due to their layer-by-layer production, to some extent direction dependent. This has to be considered when designing the part and Tensile Modulus X Direction 3800 MPa Y Direction 3800 MPa Tensile Strength X Direction 48 MPa Y Direction 48 MPa Y Direction 48 MPa Strain at break (X Direction) 49 kJ/m² Charpy impact strength (+23°C, X Direction) 29 kJ/m² Charpy notched impact strength (+23°C, X Direction) 4.6 kJ/m² Flexural Modulus (23°C, X Direction) 72 MPa Flexural Strength (X Direction) 72 MPa Temp. of deflection under load 1.80 MPa, X Direction 144 °C 0.45 MPa, X Direction 175 °C Volume resistivity (X Direction) 176 °C Temp. of deflection under load 1.80 MPa 0.45 MPa 0.45 MPa 175 °C Value Unit Melting temperature (20°C/min) 176 °C Temp. of deflection under load 1.80 MPa 0.45 MPa 0.45 MPa 175 °C Vicat softening temperature (50°C/h 50N) 169 °C Electrical properties Value Unit Relative permittivity 100Hz 100Hz 110 - Dissipation factor (1MHz) 110 - Dissipation factor (1MHz) 180 E-4 Surface resistivity Value Unit Other properties Value Unit | Test Standard |
| Tensile Modulus | |
| X Direction Y Direction 3800 MPa Y Direction 3800 MPa Tensile Strength X Direction 48 MPa Y Direction 48 MPa Y Direction 48 MPa Strain at break (X Direction) 44 % Charpy impact strength (+23°C, X Direction) Charpy impact strength (+23°C, X Direction) 4.6 kJ/m² Charpy notched impact strength (+23°C, X Direction) Flexural Modulus (23°C, X Direction) 72 MPa Texp. of deflection under load 1.80 MPa, X Direction 1.80 MPa, X Direction 1.80 MPa, X Direction 1.80 MPa, X Direction 1.80 MPa Thermal properties Value Melting temperature (20°C/min) 176 °C Temp. of deflection under load 1.80 MPa | defining the build orientation. |
| Tensile Strength X Direction 48 MPa Y Direction 48 MPa Strain at break (X Direction) 48 MPa Strain at break (X Direction) 49 KJ/m² Charpy impact strength (+23°C, X Direction) 29 KJ/m² Charpy notched impact strength (+23°C, X Direction) 4.6 KJ/m² Flexural Modulus (23°C, X Direction) 3600 MPa Flexural Strength (X Direction) 72 MPa Temp. of deflection under load 1.80 MPa, X Direction 175 °C Volume resistivity (X Direction) 3610 MPa Thermal properties Value Melting temperature (20°C/min) 176 °C Temp. of deflection under load 1.80 MPa 1.80 E-4 Dissipation factor (1MHz) 1.80 MPa 1.80 E-4 Surface resistivity 5614 Ohm Electric strength 0.1 kV/mm | ISO 527 |
| Tensile Strength X Direction Y Direction Directi | |
| X Direction 48 | |
| Y Direction48MPaStrain at break (X Direction)4%Charpy impact strength (+23°C, X Direction)29kJ/m²Charpy notched impact strength (+23°C, X Direction)4.6kJ/m²Flexural Modulus (23°C, X Direction)3600MPaFlexural Strength (X Direction)72MPaTemp. of deflection under load1.80 MPa, X Direction175°CVolume resistivity (X Direction)3E12Ohm*mThermal propertiesValueUnitMelting temperature (20°C/min)176°CTemp. of deflection under load1.80 MPa144°C0.45 MPa175°CVicat softening temperature (50°C/h 50N)169°CElectrical propertiesValueUnitRelative permittivity13-100Hz13-1MHz10-Dissipation factor (1MHz)180E-4Surface resistivity5E14OhmElectric strengthValueUnit | ISO 527 |
| Strain at break (X Direction)4%Charpy impact strength (+23°C, X Direction)29kJ/m²Charpy notched impact strength (+23°C, X Direction)4.6kJ/m²Flexural Modulus (23°C, X Direction)3600MPaFlexural Strength (X Direction)72MPaTemp. of deflection under load1.80 MPa, X Direction144°C0.45 MPa, X Direction175°CVolume resistivity (X Direction)3E12Ohm*mThermal propertiesValueUnitMelting temperature (20°C/min)176°CTemp. of deflection under load144°C1.80 MPa144°C0.45 MPa175°CVicat softening temperature (50°C/h 50N)169°CElectrical propertiesValueUnitRelative permittivity100Hz13-1MHz10-Dissipation factor (1MHz)180E-4Surface resistivity5E14OhmElectric strength0.1kV/mm | |
| Charpy impact strength (+23°C, X Direction) Charpy notched impact strength (+23°C, X Direction) Charpy notched impact strength (+23°C, X Direction) Flexural Modulus (23°C, X Direction) Flexural Strength (X Direction) Temp. of deflection under load 1.80 MPa, X Direction 1.80 MPa, X Direction 1.80 MPa, X Direction 1.80 MPa, X Direction Thermal properties Value Unit Melting temperature (20°C/min) Temp. of deflection under load 1.80 MPa 1.8 | |
| Charpy notched impact strength (+23°C, X Direction)4.6kJ/m²Flexural Modulus (23°C, X Direction)3600MPaFlexural Strength (X Direction)72MPaTemp. of deflection under load1.80 MPa, X Direction144°C0.45 MPa, X Direction175°CVolume resistivity (X Direction)3E12Ohm*mThermal propertiesValueUnitMelting temperature (20°C/min)176°CTemp. of deflection under load144°C1.80 MPa175°CVicat softening temperature (50°C/h 50N)169°CVicat softening temperature (50°C/h 50N)169°CElectrical propertiesValueUnitRelative permittivity10-10Hz10-Dissipation factor (1MHz)180E-4Surface resistivity5E14OhmElectric strength0.1kV/mm | ISO 527 |
| Flexural Modulus (23°C, X Direction) Flexural Strength (X Direction) Temp. of deflection under load 1.80 MPa, X Direction Thermal properties Value Unit Melting temperature (20°C/min) 1.80 MPa 1.8 | ISO 179/1eU |
| Flexural Modulus (23°C, X Direction) Flexural Strength (X Direction) Temp. of deflection under load 1.80 MPa, X Direction Thermal properties Value Unit Melting temperature (20°C/min) 1.80 MPa 1.8 | ISO 179/1eA |
| Temp. of deflection under load 1.80 MPa, X Direction 175 °C Volume resistivity (X Direction) Thermal properties Value Melting temperature (20°C/min) 176 °C Temp. of deflection under load 1.80 MPa 1 | ISO 178 |
| 1.80 MPa, X Direction 0.45 MPa, X Direction 175 °C Volume resistivity (X Direction) Thermal properties Value Melting temperature (20°C/min) 176 °C Temp. of deflection under load 1.80 MPa 1.80 MPa 0.45 MPa 175 °C Vicat softening temperature (50°C/h 50N) 169 °C Electrical properties Value Unit Electrical properties Value Unit Relative permittivity 100Hz 100Hz 113 - 1MHz 10 - Dissipation factor (1MHz) 180 E-4 Surface resistivity 5E14 Ohm Electric strength Value Unit | ISO 178 |
| 0.45 MPa, X Direction175°CVolume resistivity (X Direction)3E12Ohm*mThermal propertiesValueUnitMelting temperature (20°C/min)176°CTemp. of deflection under load1.80 MPa144°C0.45 MPa175°CVicat softening temperature (50°C/h 50N)169°CElectrical propertiesValueUnitRelative permittivity100Hz13-1MHz10-Dissipation factor (1MHz)180E-4Surface resistivity5E14OhmElectric strength0.1kV/mm | ISO 75-1/-2 |
| Volume resistivity (X Direction)3E12Ohm*mThermal propertiesValueUnitMelting temperature (20°C/min)176°CTemp. of deflection under load144°C1.80 MPa175°C0.45 MPa175°CVicat softening temperature (50°C/h 50N)169°CElectrical propertiesValueUnitRelative permittivity10Hz13-10Hz10-Dissipation factor (1MHz)180E-4Surface resistivity5E14OhmElectric strength0.1kV/mm | |
| Thermal properties Value Unit Melting temperature (20°C/min) 176 °C Temp. of deflection under load 1.80 MPa 144 °C 0.45 MPa 175 °C Vicat softening temperature (50°C/h 50N) 169 °C Electrical properties Value Unit Relative permittivity 100Hz 13 - 1MHz 10 - Dissipation factor (1MHz) 180 E-4 Surface resistivity 5E14 Ohm Electric strength Value Unit | |
| Melting temperature (20°C/min)176°CTemp. of deflection under load | IEC 62631-3-1 |
| Melting temperature (20°C/min)176°CTemp. of deflection under load | |
| Melting temperature (20°C/min)176°CTemp. of deflection under load | Test Standard |
| Temp. of deflection under load 1.80 MPa 0.45 MPa 175 °C Vicat softening temperature (50°C/h 50N) Electrical properties Relative permittivity 100Hz 1MHz 100 - Dissipation factor (1MHz) Surface resistivity Electric strength Other properties Value Unit Electric deflection under load 175 °C Value Unit Light deflection under load 175 °C Value Unit | ISO 11357-1/-3 |
| 1.80 MPa 144 °C 0.45 MPa 175 °C Vicat softening temperature (50°C/h 50N) 169 °C Electrical properties Value Unit Relative permittivity 100Hz 13 - 1MHz 10 - Dissipation factor (1MHz) 180 E-4 Surface resistivity 5E14 Ohm Electric strength 0.1 kV/mm | ISO 75-1/-2 |
| 0.45 MPa175°CVicat softening temperature (50°C/h 50N)169°CElectrical propertiesValueUnitRelative permittivity100Hz13-10Hz10-Dissipation factor (1MHz)180E-4Surface resistivity5E14OhmElectric strength0.1kV/mm | 100 / 0 1, 1 |
| Vicat softening temperature (50°C/h 50N) 169 °C Electrical properties Value Unit Relative permittivity 10Hz 13 - 1MHz 10 - Dissipation factor (1MHz) 180 E-4 Surface resistivity 5E14 Ohm Electric strength 0.1 kV/mm | |
| Electrical propertiesValueUnitRelative permittivity13-100Hz13-1MHz10-Dissipation factor (1MHz)180E-4Surface resistivity5E14OhmElectric strength0.1kV/mm | ISO 306 |
| Relative permittivity 100Hz 13 - 1MHz 10 - Dissipation factor (1MHz) 180 E-4 Surface resistivity 5E14 Ohm Electric strength 0.1 kV/mm Other properties Value Unit | 100 000 |
| Relative permittivity 100Hz 13 - 1MHz 10 - Dissipation factor (1MHz) 180 E-4 Surface resistivity 5E14 Ohm Electric strength 0.1 kV/mm Other properties Value Unit | |
| 100Hz 13 - 1MHz 10 - Dissipation factor (1MHz) 180 E-4 Surface resistivity 5E14 Ohm Electric strength 0.1 kV/mm Other properties Value Unit | Test Standard |
| 1MHz10-Dissipation factor (1MHz)180E-4Surface resistivity5E14OhmElectric strength0.1kV/mm | IEC 62631-2-1 |
| Dissipation factor (1MHz) Surface resistivity Electric strength Other properties 180 E-4 Ohm Ohm KV/mm | |
| Surface resistivity 5E14 Ohm Electric strength 0.1 kV/mm Other properties Value Unit | 150 63631 3 1 |
| Other properties O.1 kV/mm Value Unit | IEC 62631-2-1 |
| Other properties Value Unit | IEC 62631-3-2 |
| | IEC 60243-1 |
| | |
| | Test Standard |
| | EOS Method |
| | |

Characteristics

Processing

Delivery form

Laser Sintering, Rapid Prototyping

Powder