DURAFIDE ® 6165A4

65% Mineral/Glass reinforced, V-0 DURAFIDE 6165A4 offers a unique balance of properties based on a high mineral and glass reinforced composition. The heat resistance under load bearing conditions is excellent for this product. As with all DURAFIDE grades this product is inherently flame-retardant. Applications include electronic components (i.e. lamp houses, connection parts and sockets) and components in industry (i.e. pumps and pistons).

Rheological properties Moulding shrinkage, parallel 0.2% ISO 294-4. 2577 Moulding shrinkage, normal 0.5% ISO 294-4, 2577 Typical mechanical properties **Tensile Modulus** 19000 MPa ISO 527-1/-2 Stress at break, 5mm/min 130 MPa ISO 527-1/-2 Strain at break, 5mm/min ISO 527-1/-2 1.2% Flexural Modulus 18800 MPa ISO 178 ISO 178 Flexural Strength 210 MPa Compressive modulus 18500 MPa ISO 604 Shear Modulus 6880 MPa ISO 6721 ISO 179/1eU Charpy impact strength, 23°C 20 kJ/m² Charpy impact strength, -30°C ISO 179/1eU 20 kJ/m² Charpy notched impact strength, 23°C ISO 179/1eA 7 kJ/m² ISO 179/1eA Charpy notched impact strength. -30°C 7 kJ/m² ISO 180/1A Izod notched impact strength, 23°C 6 kJ/m² ISO 180/1A Izod notched impact strength, -30°C 6 kJ/m² Izod impact strength, 23°C 20 kJ/m² ISO 180/1U ISO 180/1U Izod impact strength, -30°C 20 kJ/m² 100 ISO 2039-2 Hardness, Rockwell, M-scale Thermal properties 280 °C Melting temperature, 10°C/min ISO 11357-1/-3 90°C Glass transition temperature, 10°C/min ISO 11357-1/-3 270 °C Temp. of deflection under load, 1.8 MPa ISO 75-1/-2 215 °C Temp. of deflection under load, 8 MPa ISO 75-1/-2 19 E-6/K Coeff. of linear therm. expansion, parallel ISO 11359-1/-2 24 E-6/K Coeff. of linear therm. expansion, normal ISO 11359-1/-2 0.68W/(m K) Thermal conductivity ISO 22007-2 0.67W/(m K) Thermal conductivity, crossflow ISO 22007-2 0.71W/(m K) Thermal conductivity, through plane ISO 22007-2 m²s Eff. thermal diffusivity Internal m²s Eff. thermal diffusivity, crossflow ISO 22007-4 m²s Eff. thermal diffusivity, through plane ISO 22007-4 930J/(kg K) Spec. heat capacity of melt Internal

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Flammability

Burning Behav. at 1.5mm nom. thick Thickness tested Burning Behav. at thickness h Thickness tested Burning Behav. 5V at thickness h Thickness tested Oxygen index	n. V-0 class 1.5 mm V-0 class 0.75 mm 5VA class 3.0 mm 53%	UL 94 UL 94 UL 94 UL 94 UL 94 UL 94 UL 94 ISO 4589-1/-2
Electrical properties		
Relative permittivity, 1MHz Dissipation factor, 1MHz Volume resistivity Surface resistivity Electri cstrength Comparative tracking index	5.6 20 E-4 >1E15 Ohm.m >1E15 Ohm 25 kV/mm PLC 2PLC	IEC 62631-2-1 IEC 62631-2-1 IEC 62631-3-1 IEC 62631-3-2 IEC 60243-1 UL 746A
Other properties		
Water absorption, 2mm Density	0.02 % 1950 kg/m³	Sim. to ISO 62 ISO 1183
Injection Drying Temperature Drying Time, Dehumidified Dryer Processing Moisture Content Melt Temperature Optimum Screw tangential speed Max. mould temperature Back pressure Injection speed	130 - 140°C 3 - 4 h 0.02 % 315 °C 0.14 - 0.16m/s 140 - 160°C 3MPa fast	Internal
Characteristics		
Additives	Release agent	
Additional information Injection molding	On injection molding machines with 15-25 D long three-sec usual in the trade, the FORTRON is processable. A shut-off r a free-flow nozzle. Melt temperature 320-340 degC Mold wall temperature at least 140 degC A medium injection rate is normally preferred. All mold cavit	tion screws, as are nozzle is preferred to
	A medium injection rate is normally preferred. All mold cavil	lies must be enectively

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vented.

Stress-strain



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Secant modulus-strain



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Processing Texts

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Pre-drying	FORTRON should in principle be predried. Because of the necessary low maximum residual moisture content the use of dry air dryers is recommended. The dew point should be =< -30° C. The time between drying and processing should be as short as possible.
Longer pre-drying times/storage	For subsequent storage the material should be stored dry in the dryer until processed (<= 60 h).
Injection molding	On injection molding machines with 15-25 D long three-section screws, as are usual in the trade, the FORTRON is processable. A shut-off nozzle is preferred to a free-flow nozzle.
	Melt temperature 320-340 degC Mold wall temperature at least 140 degC
	A medium injection rate is normally preferred. All mold cavities must be effectively vented.
Injection molding Preprocessing	Predrying in a dehumidified air dryer at 130 - 140 degC/3-4 hours is recommended.
Injection molding Postprocessing	Tool temperature of at least 135 degC is recommended for parts to achieve maximum crystallizable potential.