ABS ESD +

ABS-ESD is an Acrylonitrile Butadiene Styrene to which an additive has been added to give it Electro Static Discharge properties: this material protects against electrostatic discharge. It also provides good impact resistance and low load stress.

Used both in prototyping and in production in the field of electrical applications.

Suggested use

Prototypes	Electrical parts
Fit and assembly	Final parts
Mech tests	Spare parts
Tools	
Jig and fixtures	

Compatibilities

Support compatibility	SSU00 (break-away)
	SSU09 (Soluble with WAVE powder [1])
Material compatibility	ABS FAST, ABS HD, ABS V0
	ELASTO 85
	ELASTO 95

[1] The SSU09 support is degradable with an alkaline solution obtained by WAVE powder; the proportion of 170 g of powder per 7 liters of water is recommended. We recommend the use of an ultrasonic tank and water at 70 °C.

Easy profiles suggested

Layer	Ø 0.3 mm	Ø 0.4 mm	Ø 0.6mm	Ø 0.8 mm
0.10	**			
0.15	**	*		
0.20	*	**		
0.25		**		
0.30		*		
0.40				
0.50				

** : Recommended
* : Discrete quality

Before printing

Drying	Gentle drying (55 °C) before and during the job is needed
Cleaning	It's suggested to clean the bed with IPA before print
Extruder	NORMAL (HI-TEMP recommended)
Nozzle	Standard
SPFU	Not compatible

General advice

In case of multi-material print in combination with ELASTO 95, by SSI it is possible to choose SSU00 as support. Both ELASTO have not a good adhesion with SSU00, thus, it is preferable to orientate object in the way that only ABS ESD+ touches the support.

*Physical properties**

Propriety	Symbol	Standard	Value
Density	ρ	ISO 1183	$1.10\ \frac{g}{cm^3}$
Water absorption	w_w	ISO 62-4	0.45 %

*Thermal properties**

Propriety	Symbol	Standard	Value
Melting flow index	M. F. I.	ISO 1133	– –
Glass transition temperature	T_g	//	85 °C
Temperature deflection under load	T_f 1,8	ISO 75	65 °C
Vicat softening temperature	VST B50	ISO 306 50 °C/min	80 °C
Coefficient of linear thermal expansion	α	ISO 11359	$80 \cdot 10^{-6} °C^{-1}$
Flammability		UL94	N/A

*Electrical properties**

Propriety	Symbol	Standard	Value
Surface resistivity	σ_e	ASTM D 257	$2 \cdot 10^{10}$ ohm
Electric strength	E_B	N/A	N/A

* values provided by polymer supplier

*Tensile properties**

Propriety	Symbol	Standard	Value
Tensile modulus	E_t	ISO 527-2	1500 MPa
Yield stress	σ_y		30 MPa
Yield strain	ε_y		3.9 %
Strength at break	σ_b		-
Strain at break	ε_b		>50 %

*Impact properties**

Propriety	Symbol	Standard	Value
Charpy unnotched impact strength	a_{cu}	ISO 179	15 kJ/m^2
Type of failure	ToF		Comp. Break

* values provided by polymer supplier

The fine print

The information and values listed into this document are provided in good faith, based on specimens printed with 3ntr machines according to the latest version of SSI print parameters valid at the date of issuance.

3ntr provides you with this information for your guidance to select the correct polymer and setup but user is responsible for determining that 3ntr material is safe, technically correct and legal for the selected application.

The values listed in this documents are not meant for design specification or quality control guidelines: is it user responsibility to design parts with appropriate safety margins to comply with any material variation due part design, production, test conditions, use conditions.

The user has also the responsibility to assess the suitability of the product to the selected use, built with part(s) made with 3ntr materials and/or technologies.

3ntr is not responsible for any warranty about suitability, merchantability or fitness of any part manufactured with 3ntr materials and/or technologies.

3ntr is not responsible for any patent infringement from use of any part printed with 3ntr materials and/or technologies.

The user is responsible for proper use and disposal or recycling of the material(s) listed here according to local laws and regulations.