Castolin Eutectic®
Eutectic Castolin

Versatile Rod for Maintenance & Production Welding of Wrought and Cast Aluminum Alloys

TigTectic® 21

- Best choice for Si or Mn alloyed grades of aluminum
- Excellent for thin-walled applications
- Good ductility and corrosion resistance

TigTectic® 21

TigTectic 21 is a perfect choice for gas tungsten-arc welding of aluminum. It provides for a cosmetically clean and oxide-free weld deposit. No post-welding clean up is necessary. Alloys can be used in all-positions depending on the skill of the welder.

TigTectic 21 is recommended when welding 1xxx, 3xxx & 4xxx grade alloys.

TECHNICAL DATA

Typical Values	
Tensile Strength:	33,000 psi (227 N/mm²)
Yield Strength:	28,000 psi (197 N/mm²)
Hardness:	45 BHN
Electrical Conductivity:	IACS 39%
Shielding Gas:	100% Argon
Color Match Properties:	Good*
Current & Polarity:	AC with imposed high frequency

**Note: TigTectic 21 will darken after anodizing.*

SUGGESTED WELDING PARAMETERS:

Diameter	Welding Current			Tungsten Diameter	Filler Rod Diameter	Cup Size	Flow Rate
	Flat	Vertical	Overhead				
Up to 1/16"	60 - 90	60 - 90	60 - 90	1/16"	1/16"	1/4", 5/16". 3/8"	15 scfh
1/16" to 1/8"	125 - 160	115 - 135	120 - 160	3/32"	3/32"	3/8", 7/16"	17 scfh
1/8" to 3/16"	190 - 240	190 - 220	180 - 210	1/8"	1/8"	7/16", 1/2"	21 scfh
3/16" and up	260 - 340	220 - 260	210 - 250	3/16"	1/8"	1/2", 5/8", 3/4"	25 scfh

Note: Welding parameters for the Gas-Tungsten Arc process are based on the dimensions of the work. Optimization by trial is recommended.

PROCEDURE FOR USE

PREPARATION:

Base metal should be free of grease, oil oxides or other contaminants. Thin sections can be welded after suitable cleaning and surface oxide removal. Square-butt welding is acceptable for thin-gauge material. Thicker sections should be beveled to give a minimum included angle of 60°. The selection of the preferred tungsten diameter will depend on the material thickness and corresponding amperage range. This applies similarly to gas cup size.

TECHNIQUE:

Adjust argon shielding gas flow. Complex, or large parts, should be supported by tack-welds and jigs. Adjust stand-off distance so that the molten pool is always protected by the shielding gas and allow the rod-end to solidify before removing it from the gas envelope. Slow cool after welding.

Note: Make sure to round the tip of the filler metal rod for better heat transfer and to minimize tungsten erosion. Heavy sections should be preheated within the range of 500 - 800°F (260-426°C) for non-heat treated alloys.

TYPICAL APPLICATIONS

TigTectic 21 is particularly suitable for maintenance welding office furniture, appliances, light-guage aluminum auto bodies and refrigeration compo-nents.

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