Castolin Eutectic®
Eutectic Castolin

Specifications on the Stainless Steel
EutecTrode® Product Line

Stainless Steel Electrodes

- Industrial stainless steel products in solid electrodes
- Premium selection for all 300 series stainless steel applications
- Protection, repair and joining alloys from the experts in maintenance and repair

EutecTrodes®
The Best in Stainless Steel

A wide variety of EutecTrode alloys are available for Shielded Metal Arc fabrication and maintenance of type 300 stainless steels. Compared to ordinary electrodes, EutecTrode stainless steel alloys from Castolin Eutectic eliminate electrode overheating and excess fuming. This provides easy slag removal and less stub loss improving welder productivity and reducing material costs.

Quick Selection Guide

EutecTrode E308L-17	304, 304L, 308, 308L	Food, Dairy, Brewing, Railway and Trucking
EutecTrode E309L-17	309, 309L	Petroleum, Food and Chemical Processing
EutecTrode E310-17	310,310S	Chemical Processing, Petroleum and Transportation
EutecTrode E316L-17	316, 316Ti, 318, 319L	Pulp and Paper, Chemical, Marine, Food and Brewing

EutecTrode 308L-16 and 308L-17

EutecTrode E308L has a rutile-type coating that assures excellent weldability on DCEP and AC. Electrodes produce a steady arc with very little spatter and easy slag control and removal. Recommended primarily for welding low-carbon stainless steels such as AISI 304 and 304L. Due to its low carbon content, it can also be used to weld the stabilized grades such as AISI-321 and 347 when used below 750°F (400°C). Use a short arc with DCEP. Avoid using welding currents in excess of the maximum amperage for the selected diameter. Welding speed and current should be selected in order to avoid large molten pools.

Tensile Strength: 85,600 psi (590 N/mm²)
Yield Strength: 62,400 psi (430 N/mm²)
Elongation: (1=5d) 40%
Hardness: 200 BHN
Austenitic with approximately 5% ferrite

Diameter:	3/32" (2.5mm)	1/8" (3.2mm)	5/32" (4.0mm)	3/16" (5.0mm)
Amperage:	50-75	70-110	100-150	140-190

EutecTrode 309L-16 and 309L-17

EutecTrode E309L has a lime-rutile coating that is designed to operate on DCEP or AC in all positions. The arc is very stable and the spatter level is negligible. Strike and re-strike are excellent. Recommended for welding the heat-resistant types 309/309L stainless steels and for joining stainless steel to carbon and low alloy steels. The product is also excellent for welding AISI types 405, 410, 430 and 442 when pre-heating and post-heating treatments are not practical. To keep dilution low, amperage should be set at the lowest level. Maintain a short arc, and keep the molten pool small by travelling slightly faster than normal.

Tensile Strength: 85,600 psi (590 N/mm²)
Yield Strength: 62,250 psi (450 N/mm²)
Elongation: (1=5d) 40%
Hardness: 210 BHN
Austenitic with approximately 15% ferrite

Diameter:	3/32" (2.5mm)	1/8" (3.2mm)	5/32" (4.0mm)
Amperage:	50-80	80-120	100-160

Welding 300 Grade Stainless Steels

300 stainless have coefficients of expansion 50% higher than mild steel. Allowance should be made for expansion by increasing joint spacing when welding, this may help reduce warping.

Stainless steels have higher electrical resistance. To reduce electrode overheating problems, do not exceed the maximum recommended amperage for a selected diameter.

Because the thermal conductivity of 300 stainless is only half that of mild steel, distortion becomes a problem. To prevent excess heat build-up and resultant stressing and distortion, always use the smallest diameter rod that will do the job.

EutecTrode 310-16 and 310-17

EutecTrode E310 is a rutile-type electrode for use with DCEP and AC. The electrode has excellent weldability in all positions. The arc is smooth and steady. Slag is easy to control and remove. Used to weld the corresponding heat-resistant grade AISI 310S. It is also useful for joining high hardenable steels; ferritic chromium steels; 14% Mn steels; and for cast and/or rolled armor steels. When welding full austenitic stainless steel, excessive heat input must be avoided to reduce the risk of cracking. Interpass temperature should not exceed 200°F (100°C). Use the smallest diameter, keep the weld deposits narrow and do not weave. Best results are obtained with DCEP.

Tensile Strength: 87,000 psi (600 N/mm²)
Yield Strength: 58,000 psi (400 N/mm²)
Elongation: (1=5d) 35%
Hardness: 190 BHN
Austenitic

Diameter:	3/32" (2.5mm)	1/8" (3.2mm)	5/32" (4.0mm)
Amperage:	50-75	70-110	100-150

EutecTrode 316L-16 and 316L-17

EutecTrode E316L is a versatile electrode that has excellent weldablity on both DCEP and AC. The arc is very steady and spatter is negligible. Strike and re-strike are easy and slag is easily removed. Recommended when welding types 316 and 616L stainless steels. It can also be used to weld such stabilized steels as 316T and Columbium-bearing stainless steels. The electrode is best used with a short arc deposition technique. Use the higher end of the amperage range with DCEP. Keep the parts being welded under 200° F (100° C) during multi-pass welding.

Tensile Strength: 85,600 psi (590 N/mm²)
Yield Strength: 64,000 psi (440 N/mm²)
Elongation: (1=5d) 40%
Hardness: 210 BHN
Austenitic with approximately 10% ferrite

Diameter:	3/32" (2.5mm)	1/8" (3.2mm)	5/32" (4.0mm)
Amperage:	50-80	80-120	100-160

EutecTrode 316LVD-17

EutecTrode E316LVD-17 is a vertical down welding electrode that has excellent weldablity on both DCEP and AC. The arc is very steady and spatter is negligible. Strike and re-strike are easy and slag is easily removed. Recommended when welding types 316 and 616L stainless steels. It can also be used to weld such stabilized steels as 316T and Columbium-bearing stainless steels. The electrode is best used with a short arc deposition technique. Use the higher end of the amperage range with DCEP. An angle of 60-70° gives best weldability when used in the vertical down position.

Tensile Strength: 85,600 psi (590 N/mm²)
Yield Strength: 64,000 psi (440 N/mm²)
Elongation: (1=5d) 35%
Hardness: 210 BHN
Austenitic with approximately 10% ferrite

Diameter:	3/32" (2.5mm)	1/8" (3.2mm)
Amperage:	50-70	90-105

Pioneering Industrial Sustainability

Castolin Eutectic

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