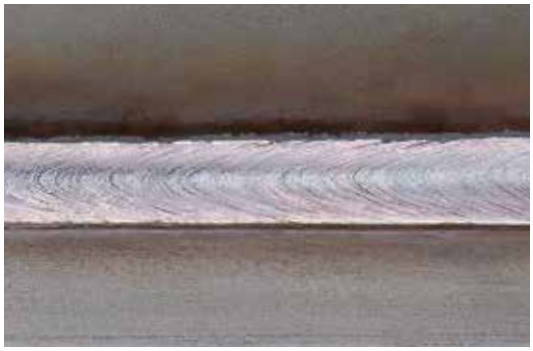
STARGON™ SS Welding Blend Helps Improve Quality in Stainless Steel Welding



STARGON™ SS blend (short circuit)

STARGON™ SS blend (pulsed-spray)

Replace Expensive Helium Blends

The world's supply of helium is finite, and with a growing demand, prices continue to climb. When welding stainless steel, helium's thermal conductive properties help to produce fine and flat welds. STARGON™ SS is able to duplicate the arc characteristics of helium welding blends with its unique composition, while offering significant cost savings.

Versatile Blend for All GMAW Processes

Linde's STARGON SS gas blend is a carefully controlled blend of argon, carbon dioxide and nitrogen. It is designed for joining a variety of thick or thin stainless steels in all positions and performs well in short circuit, spray and pulsed spray welding modes.

Features	Benefits
Nitrogen-enhanced shielding gas blend	→ Excellent arc stability → Good weld penetration and surface appearance → Chemistry control for strong corrosion resistance → Reduced base metal distortion
Low oxidizing potential	→ Controlled CO_2 level for reduced weld carbon content, resulting in improved corrosion resistance → Improved color match
Good performance over a wide range of welding parameters	→ Good short-circuit welding performance → Optimized travel speed performance in pulsed spray → Good bead shape with minimal spatter
Excellent mechanical properties	→ Equivalent or greater tensile strengths → Equivalent or greater corrosion resistance

Exceptional Performance on Thin Materials

Linde's argon-based STARGON SS gas blend doesn't require higher arc voltages like helium-based blends. High arc voltages increase heat input into the weld, which affects product quality when welding thin materials. STARGON SS blend allows for lower welding voltages, compared to helium blends. This means less heat input during welding, resulting in less metal distortion. Lower heat input using STARGON SS blend also decreases sensitization of the chrome in the weld, thus improving corrosion resistance in the weldment. This makes STARGON SS blend an ideal blend for sheet metal and thin-gauge applications.

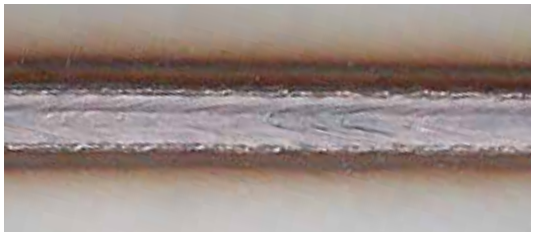
IMR test labs (third party testing) stainless steel welding gas blend	Tensile stregnth ASME IX:2017 tensile strength (KSI)	Corrosion resistance ASTM G 48 method A mass loss - 72 hrs (grams)
STARGON™ SS (Ar / CO2 /N2) - best in class	92.75	3494
98% Ar/ 2% O2	91.00	3869
A1025 blend (7.5%Ar/90%He/2.5%CO2)	88.50	3561
HELISTAR SS blend (66%Ar/33%He/1%CO2)	88.50	3987
98% Ar/ 2% CO2	77.50	3692

Weld Comparisons

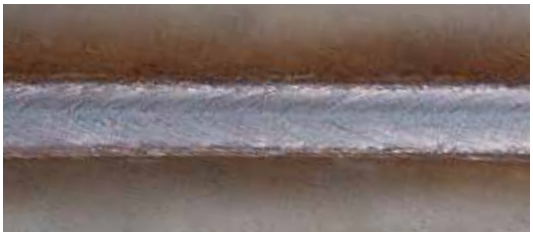
These photos show typical results when welding 304 stainless steel, using ER308L welding wire. The top row shows results when using Linde's STARGON SS welding blend while the second row shows results when using commonly used helium-based welding blends. The bottom photo shows results typical on thin materials.

STARGON™ SS blend (short circuit)

STARGON™ SS blend (pulsed-spray)



A-1025 90% helium (short-circuit)



HELISTAR™ SS blend - 33% helium (pulsed-spray)

STARGON™ SS blend

HELISTAR™ SS blend

A-1025 blend

Welding gas distortion comparison

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