



**PRAXAIR'S STARGON® SS – ARGON/CARBON DIOXIDE/NITROGEN BLEND**  
 FOR ALL FORMS OF GAS METAL ARC WELDING (GMAW OR MIG/MAG)  
 OF STAINLESS STEEL

Praxair's *Stargon® SS* gas blend is a carefully controlled blend of argon, carbon dioxide and nitrogen that is designed for joining a wide variety of stainless steels. It is well-suited for all-position welding as it can be used with all types of metal transfer (i.e. short-circuiting, pulsed, and conventional spray). It produces excellent quality welds when joining light gauge material with short-circuiting transfer and offers cost savings when compared with the high-helium content gases currently used today.

With its controlled CO<sub>2</sub> content, the *Stargon SS* blend can be utilized in most austenitic stainless steel applications, particularly where weld metal carbon control is required. The addition of nitrogen to the *Stargon SS* blend enhances arc performance by increasing its stability, improves weld penetration, and reduces distortion in the welded part. It also assists in maintaining weld metal nitrogen levels for materials such as duplex stainless steels where such chemistry control is critical to maintaining microstructural integrity and increased corrosion resistance.

**Product Features**

- Nitrogen-enhanced shielding gas blend.
- Low oxidizing potential.
- Very good performance over a wide range of welding parameters.

**Benefits**

- Very good arc stability
- Good weld penetration and surface appearance.
- Excellent chemistry control for good corrosion resistance.
- Reduced base metal distortion
- Controlled CO<sub>2</sub> level for reduced weld carbon content resulting in improved corrosion properties; low levels of welding fume.
- Improved color match
- Very good short-circuiting performance – good bead shape with minimal spatter.
- Very good performance in pulsed spray – good bead shape and optimized travel speed.

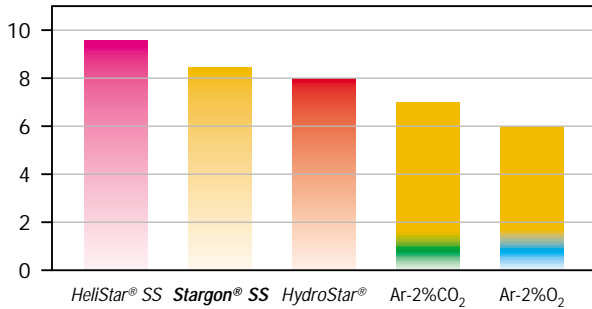
**Typical Applications**

- Pulsed and spray welding of dump truck bodies – excellent appearance, minimum spatter, little post-weld clean-up.
- Joining thin gauge stainless in the food service industry where bead shape is important.
- Duplex stainless steel pipe and other pipe alloys commonly used in the chemicals industry.
- Architectural applications where minimal distortion and appearance are of concern.
- Thin gauge applications where low base material distortion is required.

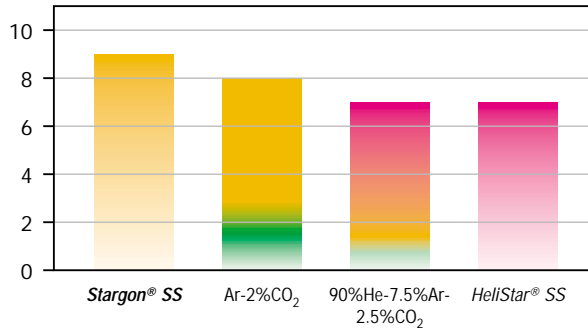
## Performance Characteristics

Below are comparisons between shielding gas blends used with the MIG process and 308LSi filler wire, over a range of operating conditions. They should be used to aid in shielding gas selection for a specific application.

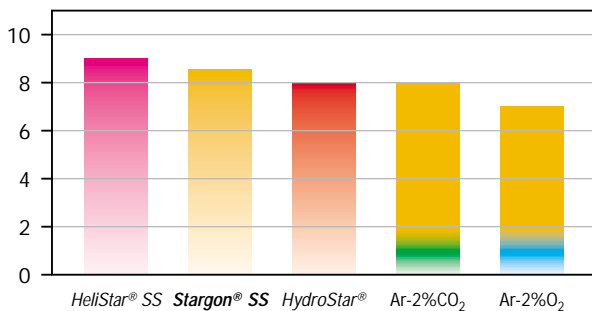
**Travel Speed – Pulsed Spray** (10 = most, 1 = least)



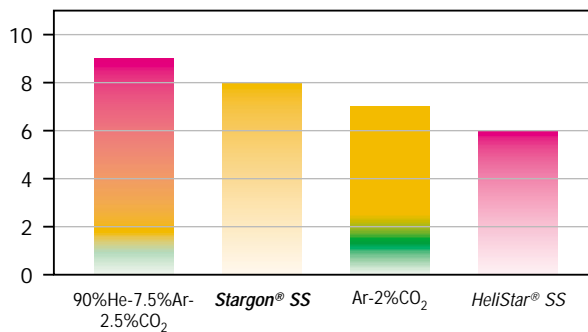
**Travel Speed – Short Arc** (10 = most, 1 = least)



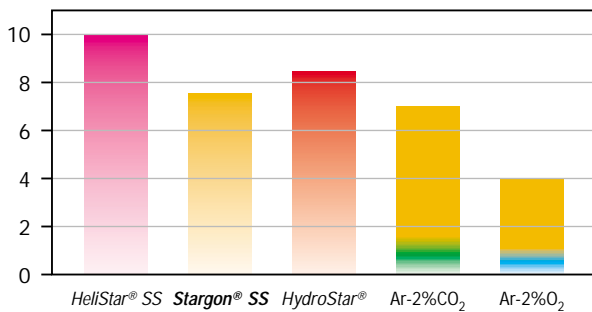
**Bead Shape – Pulsed Spray** (10 = most, 1 = least)



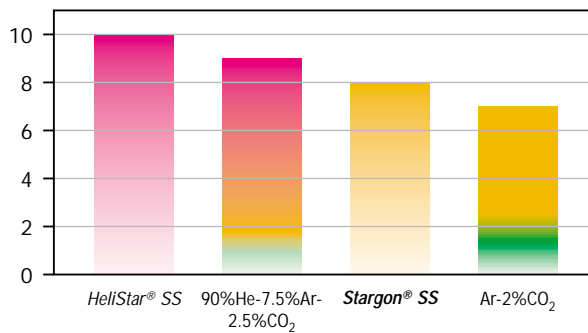
**Bead Shape – Short Arc** (10 = most, 1 = least)



**Bead Color – Pulsed Spray** (10 = most, 1 = least)



**Bead Color – Short Arc** (10 = most, 1 = least)



**Note:** The selection of the appropriate shielding gas can become quite complex due to the large variety of operating conditions (base metal – thickness and type, metal transfer, wire selection, welding position, etc). Please consult your Praxair representative for the best options available for your application.

## Welding Conditions Selection Table

Wire diameter (inches)	Wire feed speed (ipm)	Current level (amps)	Voltage (volts)*
0.035 (1.0 mm)	275-375	115-145 (short arc)	18-20
0.035 (1.0 mm)	250-350	90-120 (pulsed spray)	20-22
0.045 (1.2 mm)	200-275	150-195 (short arc)	19-21
0.045 (1.2 mm)	200-275	150-195 (pulsed spray)	21-23

\*Voltage level for 60 Hz power supply. Add 2-3 volts for 50Hz models.



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