



**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 operates well in all types of metal transfer (i.e. short-circuiting, pulsed, and conventional spray). Praxair's *Stargon SS* blend produces excellent quality welds in short-circuiting applications and compares very favorably in these same areas where high-helium content gases are currently used.

Because of its lower CO<sub>2</sub> content, it can be utilized in most austenitic stainless steel application where weld metal carbon control is required. The nitrogen component in the *Stargon SS* blend enhances arc performance by increasing stability and also increases penetration into the base material. It also assists in maintaining weld metal nitrogen levels for materials such as duplex stainless steels where chemistry control is critical to maintaining microstructural integrity and balance.

**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.

---

- Controlled CO<sub>2</sub> level for reduced weld carbon content resulting in improved corrosion properties; low levels of welding fume.

---

- Very good short-circuiting performance – good bead shape with minimal spatter.
- Very good performance in pulsed spray – good bead shape and optimized travel speed.

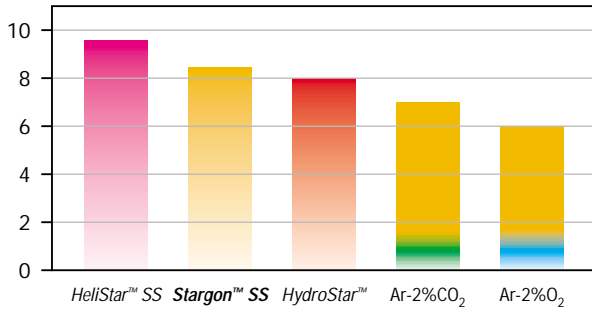
**Typical Applications**

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

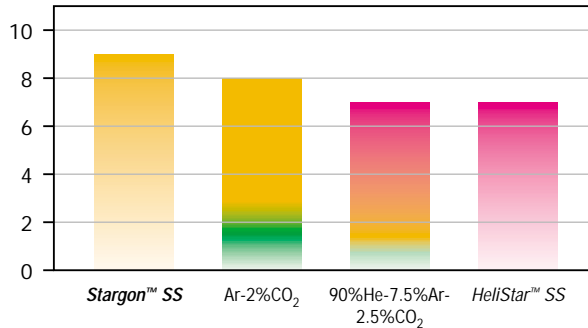
## Performance Characteristics

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.

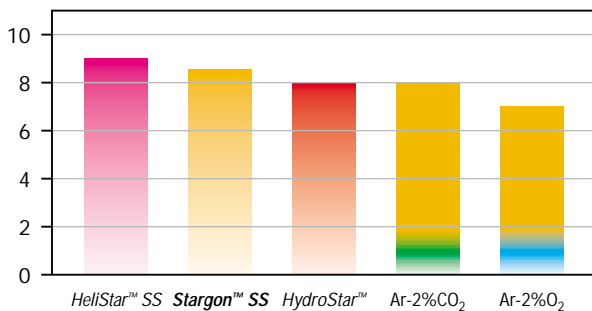
**Travel Speed – Pulsed Spray** (10 = most, 1 = least)



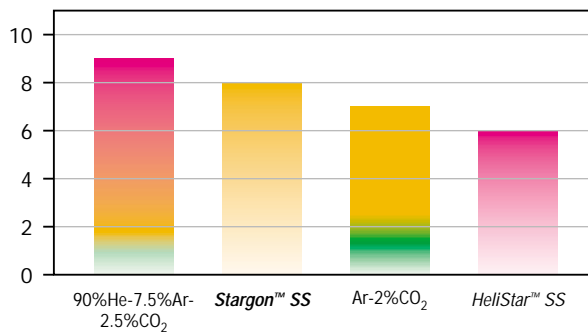
**Travel Speed – Short Arc** (10 = most, 1 = least)



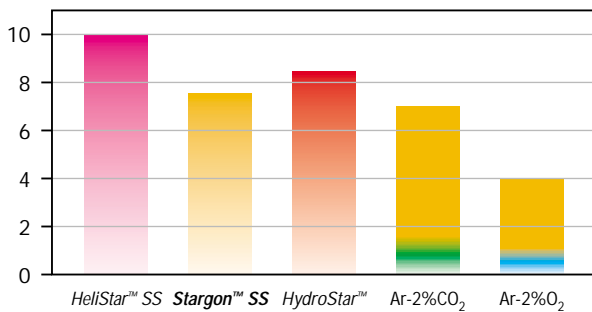
**Bead Shape – Pulsed Spray** (10 = most, 1 = least)



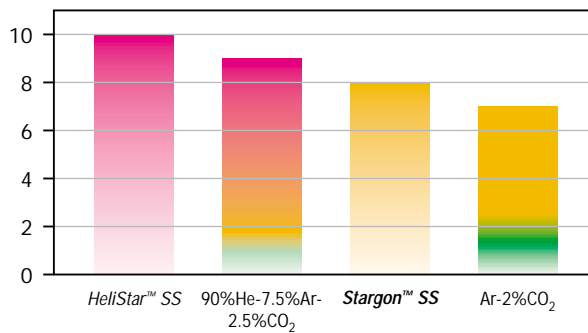
**Bead Shape – Short Arc** (10 = most, 1 = least)



**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.



Praxair Distribution, Inc.  
39 Old Ridgebury Road  
Danbury, CT 06810-5113  
Tel: 1-800-225-8247  
Fax: 1-800-593-5332  
Internet: www.praxair.com/metalfab  
e-mail: info@praxair.com

© Copyright, 2003 Praxair Technology, Inc. All Rights Reserved.  
Praxair, the Flowing Airstream design, HeliStar, HydroStar and Stargon are trademarks, service marks or registered trademarks of Praxair Technology, Inc. in the United States and/or other countries. The information contained herein is offered for use by technically qualified personnel at their discretion and risk, without warranty of any kind.

P-8785 5M 2/03