

BLUESHIELD™

advanced shielding gases.
when it matters, BLUESHIELD delivers.



When precision and performance matters.



BLUESHIELD delivers the highest quality welding mixtures for increased productivity.

When precision matters

BLUESHIELD delivers superior mix accuracy and consistency.

- Precise, proprietary mixing.
- Traceable batch analysis.
- High-quality homogenous mixes.
- Meets and exceeds AWS A 5.32 specifications.*

When performance matters

BLUESHIELD delivers increased productivity and lower overall welding cost.

- Excellent control over bead shape, penetration, wetting and travel speed.
- Reduces smoke and spatter to improve operator's environment.
- Provides a good surface finish to minimize clean-up costs.
- Permits a broad range of welding parameters.
- Consistent weld metal chemistry and mechanical properties.
- Minimizes expensive rejects and re-works.

BLUESHIELD provides exceptional weld bead appearance, penetration, wetting and x-ray quality



**Smoke and spatter reduction:
BLUESHIELD 211
vs. CO₂ FCAW**



*Applies to all mixes with minor component greater than or equal to 5%.

When flexibility matters.

BLUESHIELD delivers a specific shielding gas for every welding process and application.



GAS METAL ARC WELDING (GMAW)

Carbon Steel

For carbon steel Air Liquide offers four outstanding gas mixes that will optimize your welding procedure.

- **BLUESHIELD 5** provides fast travel speeds in spray transfer mode.
- **BLUESHIELD 6** enables fast travel speeds and gives the operator the versatility of welding in spray transfer mode as well as short circuit transfer mode. In addition to GMAW, BLUESHIELD 6 is ideal for Metal Cored Arc Welding (MCAW).
- **BLUESHIELD 8** consists of 75% Argon, 25% CO₂ and has become an industry standard for most mild steel welding applications.
- **BLUESHIELD 23** improves arc stability, reduces fumes and spatter, and improves bead appearance in any mild steel GMAW application. BLUESHIELD 23 can be used in all modes of transfer on any material thickness.

Stainless Steel

Two mixes have been developed to improve welding performance, bead appearance and color match for gas metal arc welding of stainless steels.

- **BLUESHIELD 9** gives you the benefits of a high helium, tri-mix GMAW shielding gas. It is commonly used for all stainless steel short circuit transfer applications.
- **BLUESHIELD 20** allows for spray transfer and increased travel speeds.

Non-Ferrous

For all non-ferrous applications, BLUESHIELD delivers two optimized shielding gases.

- **BLUESHIELD A** provides exceptional purity and quality of argon shielding gas.
- **BLUESHIELD 1** offers high heat input in the welding process for thick section material where penetration is a primary concern.

GAS TUNGSTEN ARC WELDING (GTAW)

BLUESHIELD delivers three, high-quality gases to meet the exceptional requirements of GTAW.

- **BLUESHIELD A** provides dependable x-ray quality welds and is commonly used in the GTAW welding process.
- **BLUESHIELD 1** can be used for additional heat input with good color match and arc stability.
- **BLUESHIELD 12** provides high heat input for welding 300 series stainless steels. It is the preferred shielding gas for automated applications.

FLUX CORED ARC WELDING (FCAW)

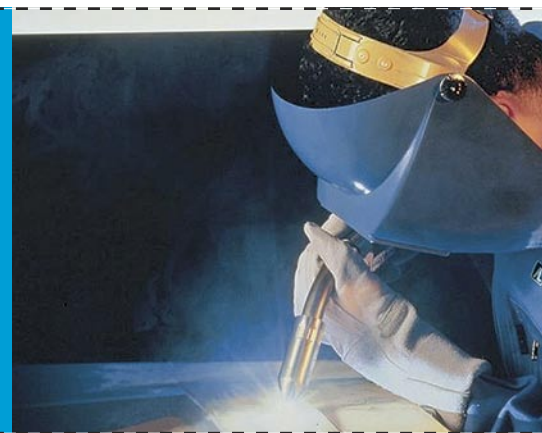
BLUESHIELD offers two, premium shielding gases for FCAW.

- **BLUESHIELD 8** is the traditional shielding gas for welding mild steel and stainless steel FCAW.
- **BLUESHIELD 211** significantly reduces fume emissions and provides a smoother metal transfer. It practically eliminates spatter and improves bead appearance and quality.

	GMAW	GTAW	FCAW
Mild Steel	BLUESHIELD™ 5 BLUESHIELD™ 6 BLUESHIELD™ 8 BLUESHIELD™ 23 BLUESHIELD™ 211	BLUESHIELD™ A BLUESHIELD™ 1	BLUESHIELD™ 8 BLUESHIELD™ 211
Stainless Steel	BLUESHIELD™ 9 BLUESHIELD™ 20	BLUESHIELD™ A BLUESHIELD™ 1 BLUESHIELD™ 12 (300 series only)	BLUESHIELD™ 8 BLUESHIELD™ 211
Non Ferrous	BLUESHIELD™ A BLUESHIELD™ 1	BLUESHIELD™ A BLUESHIELD™ 1	N/A

When reputation matters.

Air Liquide is the premier name in welding technology, and it has been for over 100 years.



ADVANCED SHIELDING GASES

NAME	COMPOSITION	MAIN APPLICATION
BLUESHIELD™ A	Argon	GTAW Steel, Stainless Steel, Non-ferrous GMAW Non-ferrous Short Circuit, Spray, Pulse
BLUESHIELD™ 1	Argon, Helium	GTAW Steel, Stainless Steel, Non-ferrous GMAW Non-ferrous Short Circuit, Spray, Pulse
BLUESHIELD™ 5	Argon, Oxygen	GMAW & MCAW Steel Spray, Pulse
BLUESHIELD™ 6	Argon, CO ₂	GMAW & MCAW Steel Short Circuit, Spray, Pulse
BLUESHIELD™ 8	Argon, CO ₂	FCAW & MCAW Steel, Stainless Steel GMAW Steel, Short Circuit
BLUESHIELD™ 9	Argon, Helium, CO ₂	GMAW Stainless Steel Short Circuit
BLUESHIELD™ 12	Argon, Hydrogen	GTAW Stainless Steel (300 series only)
BLUESHIELD™ 20	Argon, Helium, CO ₂	GMAW Stainless Steel Short Circuit, Spray, Pulse
BLUESHIELD™ 23	Argon, Oxygen, CO ₂	GMAW Steel Short Circuit, Spray, Pulse
BLUESHIELD™ 211	Argon, Helium, CO ₂	FCAW Steel, Stainless Steel GMAW Steel, Short Circuit

Air Liquide offers services that can optimize your process and deliver bottom-line savings.

A global team of industry-trained experts with in-depth knowledge of your applications are ready to design and implement solutions to optimize your production process, improve productivity and increase profitability.

Our highly trained **Welding Application Specialists** are Certified Welding Inspectors (CWI) with many years of experience in welding processes, procedures and analysis. From shielding gas and metallurgical requirements to procedure recommendations and personnel training, our specialists can help optimize your welding processes.

Today, we continue to take safety and precision to new, groundbreaking levels through innovative research and technologies. Air Liquide has more than 200 welding and cutting patents and 250 specialists around the world to ensure the best and most innovative solutions for today's technically advanced requirements.

When safety and packaging matters.

BLUESHIELD delivers the safest, most advanced cylinder packaging.



BLUESHIELD cylinders are equipped with the SCANDINA™ Cap and Residual Pressure Valve (RPV).

SCANDINA Cap:

- Provides continuous valve and regulator protection.
- Designed for easy maneuvering to reduce risk of accidents.
- Permanently attached cap prevents loss and thread misalignment.

Chrome Residual Pressure Valve (RPV)/Check Valve:

- Ensures gas quality.
- Restricts back flow into cylinder.
- Designed to prevent cylinder contamination.
- Shrink-wrapped to provide tamper-evident protection.

Unique
16-packs offer
the most
product with
the same
high quality
standards



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Founded in 1902 and now present in 65 countries with 30,800 employees, **Air Liquide** is the **world leader** in industrial and medical gases and related services. The Group offers **innovative solutions** based on constantly enhanced **technologies** to help manufacture many indispensable everyday products and preserve life.

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