Coregas has manufactured and distributed high quality industrial, medical and speciality gases in Australia since 1976.

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COREGAS PTY LTD
Head Office – Sydney
66 Loftus Road
Yennora NSW 2161
Telephone: (02) 9794 2223
Facsimile: (02) 9794 2264
Internet: www.coregas.com

ADELAIDE
6 Jonal Drive
Cavan SA 5094
Telephone: (08) 8222 1111
Facsimile: (08) 8262 1104

BRISBANE
Cnr Pradella Street &
Ipswich Road
Darra QLD 4076
Telephone: (07) 3291 7111
Facsimile: (07) 3274 0079

MELBOURNE
3 Milne Street
Thomastown VIC 3074
Telephone: (03) 9463 9111
Facsimile: (03) 9464 0079

NEWCASTLE
6 Laurio Place
Mayfield NSW 2304
Telephone: (02) 4968 5111
Facsimile: (02) 4967 3533

WOLLONGONG
228 Berkeley Road
Unanderra NSW 2526
Telephone: (02) 4271 5337
Facsimile: (02) 4271 3348

YENNORA
Cnr Loftus Rd & Boola Avenue
Yennora NSW 2161
Telephone: (02) 9794 2223
Facsimile: (02) 9794 2264

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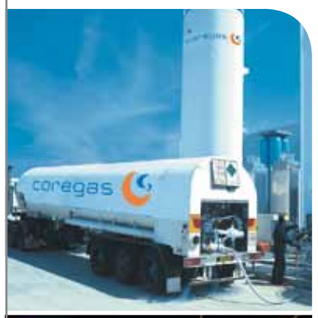

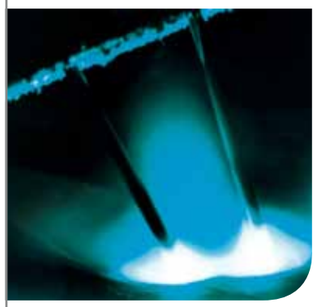

coregas

Shieldpro and Coregas

shielding gases

selection chart

Wesfarmers Industrial and Safety

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Shielding gases selection chart.

As one of Australia's leading manufacturers of industrial gases, Coregas has decades of experience in the development, manufacture and the application of shielding gases for welding.

In a bid to maintain a competitive advantage over competitors, Coregas has focused it's efforts on offering it's customers product solutions ensuring quality improvements and rationalisation.

As a result of this, we are able to offer a variety of shielding gases to specifically meet our customer's requirements. We offer tailored solutions that create added value, competitive advantages and greater profitability regardless of your industry or company size.

Our shielding gases fall into two categories:

Shield*pro* gas mixtures predominantly have additions of Helium, Hydrogen or Nitrogen thus giving the shielding gas the ability to achieve higher performance in the areas of welding speed, penetration, profile, surface appearance, metallurgical benefits etc. giving advantages to the two major areas of concern in a welding process – quality and economics.

Core*gas* comprises Argon, Carbon Dioxide, Oxygen and mixtures thereof. They offer you and extensive range from which to choose a gas for a clean, quality and economical weld.

The Shielding Gas Solutions Guide below offers a basic overview of the welding process, materials and the suitable shielding gases for each application.

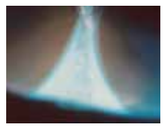
MATERIAL	SHIELDING GAS	COMPOSITION	PROCESS	FEATURES AND BENEFITS
Carbon steel	Coregas 5/2	$Ar\text{-}CO_2\text{-}O_2$	GMAW	Up to 8mm. Dip transfer, minimal spatter, good control when positional welding.
	Coregas 07	$Ar\text{-}O_2$	GMAW	Up to 6mm. Minimal spatter, good weld profile, reduced penetration. Smooth running. Not good for out of position. Good for galvanised.
	Coregas 10	$Ar\text{-}CO_2$	GMAW	All thicknesses. Good arc transfer, smooth appearance, little spatter. Good for robotic welding.
	Coregas 16/3	$Ar\text{-}CO_2\text{-}O_2$	GMAW	12mm and above. Dip and spray transfer, good penetration profile and smooth running.
	Coregas 18	$Ar\text{-}CO_2$	GMAW–FCAW	Heavy section material. Spray transfer. Also FCAW carbon and stainless steel. Improved working environment and easy to set the working point
	Coregas 25	$Ar\text{-}CO_2$	GMAW–FCAW	Heavy section material. Mainly intended for short arc welding with less risk of porosity when plates are dirty, oily or having mill scale. Also spray transfer, FCAW carbon and stainless steel.
	Coregas He 30	$Ar\text{-}HE\text{-}CO_2$	GMAW	High deposition rates. Good weld profile and penetration. Mainly for automation and good for heavier sections of galvanised material.
	Carbon Dioxide	CO_2	GMAW–FCAW	Up to 10mm. Dip transfer only. Increased spatter levels. Also for some FCAW applications.
	Argon	Ar	GTAW	All thicknesses.
Stainless steel	Shieldpro 20	$Ar\text{-}CO_2$	GMAW	All thicknesses. Dip and spray transfer, minimal oxidation. Excellent for pulsed MAG. Good penetration and flat weld bead. Improved working environment.
	Shieldpro 21	$Ar\text{-}O_2$	GMAW	Up to 3mm. Dip transfer. Reduced penetration and smooth running.
	Shieldpro 22	$Ar\text{-}H_2$	GTAW	Hydrogen addition gives higher welding speed due to hotter and more constricted arc. 2mm and above. Austenitic stainless steels only. Increased deposition rates. Reduced oxides. Improved weld profile.
	Shieldpro 23	$Ar\text{-}N_2$	GTAW	The Nitrogen addition reduces Nitrogen loss from the weld metal resulting in better corrosion properties compared to welding with pure Argon. Mainly for orbital TIG welding. Increased pitting corrosion resistance.
	Shieldpro 30	$Ar\text{-}HE\text{-}CO_2$	GMAW	All-round gas for stainless steels and duplex. 3mm and above. Good deposition rates and weld profile. Increased penetration and fluidity of the weld pool. Higher welding speed compared to gases without Helium.
	Shieldpro 31	$Ar\text{-}HE\text{-}CO_2$	GMAW	All thicknesses. Good deposition rates, weld profile and smooth surface appearance.
	Shieldpro 32	$Ar\text{-}HE\text{-}CO_2$	GMAW	Over 6mm. Good deposition rates and weld profile.
	Shieldpro 33	$Ar\text{-}HE\text{-}O_2$	GMAW	Over 3mm stainless steel and Duplex. Good deposition rates and weld profile. Reduced spatter. good edge wetting.
	Argon	Ar	GTAW	All thicknesses. Most commonly used.
Non-ferrous	Shieldpro He 25	Ar-HE	GMAW–GTAW	Over 3mm. Good deposition rates and weld profile.
	Shieldpro He 50	Ar-HE	GMAW–GTAW	Over 3mm. Good deposition rates and weld profile.
	Shieldpro He 75	Ar-HE	GMAW	Above 6mm. Good deposition rates and weld profile. Smooth arc characteristics, rotate, clean, smooth surface appearance.
	Argon	Ar	GMAW–GTAW	Below 3mm. Acceptable deposition rates and weld profile.
Copper and alloys	Shieldpro He 25	Ar-HE	GMAW–GTAW	Above 3mm. Good deposition rates and weld profile.
	Argon	Ar	GMAW–GTAW	Below 3mm. Acceptable deposition rates and weld profile.
Nickel and alloys	Shieldpro 22	$Ar\text{-}H_2$	GTAW	2mm and above. Increased deposition rates. Reduced oxides. Improved weld profile.
	Argon	Ar	GMAW–GTAW	Below 3mm. Acceptable deposition rates and weld profile.

NB The above recommendations are only a basic guide. For the most accurate recommendation several other aspects must be considered including wire diameter, the setting of parameters and welding position.

Short Arc

Globular Transition Arc

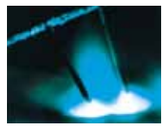
Spray Arc



Pulsed Arc

Rotating Arc

Twin Arc Welding



TIG Arc