

Shielding gas	Typical application and effects	Material thickness in mm																Components				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	14 plus	Argon	Oxygen	Carbon Dioxide	Helium	BSEN ISO 14175 Class	
MIG (MAG) Welding Mild Steel	Argon/CO₂ Welding Mix 5	For use on thin sections. Low spatter and good weld appearance. Useable in all positions. Also suitable for pulsed arc and some robotic use.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	93%	2%	5%		M14
	Argon/CO₂ Welding Mix 8	Mainly used for thin sections, this gas can also be used at high currents for high deposition rates.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	92%		8%		M20
	Exellar 5	For use on thin and medium thickness sections. Ideal for pulsed and spray transfer welding. Excellent for robotic and automated welding.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	95%	5%			M22
	Argon/CO₂ Welding Mix SM	Suitable for a wide range of thicknesses, smooth arc with low spatter levels.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	85%	15%	13.5%		M24
	Argon/CO₂ Welding Mix 20	For use on thick sections. Not generally used for pulsed arc, but excellent with many cored wires.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	78%	2%	20%		M26
	Argon/CO₂ Welding Mix 210	Suitable for thick plate. Low weld bead contamination. ASME compliant.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	80%		20%		M21
Carbon Dioxide	Used in dip transfer on thin and galvanised sections. Recommended for some cored wire.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			99.9%		C1	
MIG (MAG) Welding Stainless Steel	Exellar 2	For use on thin and medium thickness sections. Can be used in spray or dip transfer, some surface oxidation. Can be used for Stainless to Mild Steel joints.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	98%	2%			M13
	Stellar 1	Excellent for dip transfer when high quality positional work is required, with a clean bead and good profile.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	13%		2%	85%	M12
	Stellar 6	For use with thicker sections. Suited to spray and pulse transfer and where appearance is important.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	63%		2%	35%	M12
	Argon/CO₂ Welding Mix 3	Suitable for most sections (multi passes). Reduced levels of surface oxidation compared to Argon/Oxygen mixes. Very cost effective.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	97.5%		2.5%		M12
MIG Welding Aluminium	ARCAL Prime	For use on thin and medium thickness sections. Good arc control, used with or without pulse.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	99.998%				I1
	Stellar 30	Helium mixtures provide extra heat which produces a flatter, broader, weld bead profile with the potential for faster welding and reduced distortion, compared to Argon. Higher Helium levels are suitable for thicker sections.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	70%			30%	I3
	Stellar 50	See Stellar 30.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	50%			50%	I3
	Stellar 75	See Stellar 30.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	25%			75%	I3

PLEASE NOTE: This chart is designed as a guide only, the nature and position of the workpiece may effect the choice of gas. The welding of material thicker than 8mm will often require more than one pass. Mild and Stainless Steel suggested shielding gas flow rates: < 200amps 14 litres per min, 200 to 350 amps 14-18 litres per min, > 350 amps 20 litres, add 20% flow for Aluminium. Shielding gas flow rates for robots may be higher than for manual welders, due to increased wire 'stick out'. For cored wires consult the wire manufacturer as to which is the preferred shielding gas and gas flow rate.



For further information, call free on **0800 637737**