



SHIELDING GASES

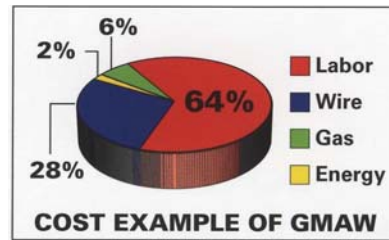
102 is recommended for spray transfer on steel applications that require a broad flat bead. Using a long arc length can produce butt welds that require a broad flat bead. This two-part gas mixture of argon and oxygen improves arc stability and provides a more fluid weld pool. The filler metal transfer with argon/oxygen helps reduce spatter levels, and the fluid weld pool permits higher travel speeds.

105 is recommended for production applications. This two-part gas mixture of argon/oxygen provides exceptional arc stability for spray transfers. The reduction of spatter, faster wire speeds, and increased deposition makes it especially useful for automatic and robotic applications. This mixture is excellent for spray transfer on thin materials due to lower voltage requirements. The globular-to-spray transition current for a .035" wire diameter is 155 amps (DCRP). 105 is the only argon-base shielding gas available as a stable, pre-blended liquid. The one-tank system eliminates the need for mixing equipment and a second gas supply. One liquid container replaces the volume of gas in 16 large high-pressure argon/oxygen cylinders.

208 is recommended when increased arc energy is required, which results in broad penetration on plate material. 208 improves

penetration and deposition rates. The arc energy with this mix helps make it more tolerant to mill scale or rust. The stable arc helps reduce spatter with high deposition applications on steel over 3/16" thick. 208 yields super weld profiles with low surface oxidation. This mixture is also excellent for metal-cored electrodes.

218 is recommended for job shops due to its suitability for a wide range of steel applications. This two-part gas mixture of argon and carbon dioxide provides exceptional arc stability for short arc



Labor is the highest cost factor associated with gas metal arc welding. Shielding Gas can reduce labor costs, improve product quality, and increase weld productivity.

transfer. 218 helps reduce melt-through and distortion with less spatter on thin material. In spray transfer, this mix reduces porosity, and is less sensitive to mill scale or rust. This two-part mix is also beneficial on sheet metal fabrication due to the excellent arc stability at very low current levels. The low current and controllable arc help minimize melt-through and distortion.

225 is a two-part gas mixture of argon and carbon dioxide which provides excellent penetration on thick material when welding vertical up with both solid wire and flux cored filler metals. The increased carbon dioxide promotes deep penetration. It is also recommended when material fit-up is a problem. The high percentage of carbon dioxide is a benefit when bridging gaps with short circuiting transfer. This mixture is well suited for flux cored wires. With 225, your flux-cored filler metals will exhibit improved alloy retention, good weld profile, and reduced spatter.

582 is a three-part gas mixture of argon, carbon dioxide, and oxygen which provides exceptional arc stability over a broad range of current settings. This mix is recommended for job shops due to its suitability for a wide range of material thickness when using the appropriate mode of metal

WELDING APPLICATIONS				
✓ = Recommended ◆ = Acceptable	SHEET METAL	PLATE	PIPE	TUBING
102	◆	✓	◆	◆
105	✓	✓	◆	✓
208	◆	✓	◆	◆
218	✓	✓	✓	✓
225	◆	✓	✓	◆
582	✓	✓	◆	✓

transfer. This three part mix is also beneficial on sheet metal fabrication due to the excellent arc stability at very low current levels. The low current and

controllable arc help minimize melt-through and distortion.

CONTACT OUR CUSTOMER SERVICE GROUP AT 1-800-942-1148 AND ASK THAT A TECHNICAL REP CONTACT YOU



STEEL



STEEL

SHIELDING GASES FOR GAS METAL, METAL CORE & FLUX CORE ARC WELDING CARBON & LOW-ALLOY STEELS

- 102** 98% argon / 2% oxygen
- 105** 95% argon / 5% oxygen
- 208** 92% argon / 8% carbon dioxide
- 218** 82% argon / 18% carbon dioxide
- 225** 75% argon / 25% carbon dioxide
- 582** 90% argon / 8% carbon dioxide / 2% oxygen

In gas metal arc welding (GMAW), also known as metal inert gas (MIG) welding, the weld metal is shielded from the atmosphere by a flow of shielding gas. To avoid contamination of the weld pool, three main gases are utilized for shielding steel with the mig process. Argon provides easy arc starts and a stable welding arc; however, an active gas (CO₂ and/or oxygen) must be added to argon in order to allow the weld to wet out and to increase weld penetration. Carbon Dioxide additions in argon allow increased travel speeds with greater depth and width of fusion. An oxygen addition in argon also increases

travel speeds, stabilizes the welding arc, lowers the spray transition current, reduces spatter, and causes a more fluid weld pool. electing the proper shielding gas is as important as selecting the correct filler metal. The correct shielding gas can help control weld bead profile, weld deposition rates, penetration into base metal and weld defects.

To help simplify selection and ordering of shielding gas mixtures, GTS developed a series of **ARGO BLEND™** Brand Shielding Gases for welding steel.

GMAW METAL TRANSFER			
✓ = Recommended ✦ = Acceptable	SHORT ARC	SPRAY ARC	PULSE ARC
102		✓	✓
105	✦	✓	✓
208	✦	✓	✓
218	✓	✓	✦
225	✓		
582	✓	✓	✓

PROCESS			
✓ = Recommended ✦ = Acceptable	GAS METAL	METAL CORE	FLUX CORE
102	✓		
105	✓	✦	
208	✓	✓	
218	✓	✓	✓
225	✓	✦	✓
582	✓	✓	✦

