

MATHESON *Select*® Shielding Gas He-25 for GTAW and GMAW on Aluminum

Faster travel speed and reduced porosity

This mixture of Helium and Argon enables higher arc energy than possible with 100% Argon. As a result, porosity is reduced, weld shape and penetration are improved, and higher travel speed is made practical. MATHESON *Select*® He-25 is also ideal for use on most other non-ferrous materials.

Typical challenges when welding on aluminum

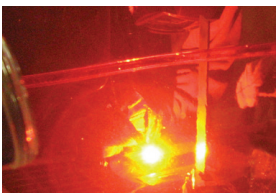
- 100% Argon used on aluminum can often lead to porosity in the weld root
- Finger-shaped penetration is common with 100% Argon
- The low arc energy of 100% Argon fails to adequately clean out the oxides on aluminum surface, allowing them to be driven into and contaminate the weld

Key Benefits of He-25

- Higher arc energy leads to reduced porosity
- Higher arc energy allows faster travel speed
- Higher arc energy yields better penetration characteristics
- Higher arc energy promotes cleanup of oxides on the aluminum surface
- Faster travel speeds result in a reduced heat affected zone
- Better arc starting (GTAW)
- Better mechanical properties
- Improved bead appearance
- Lower ozone formation

Other Benefits

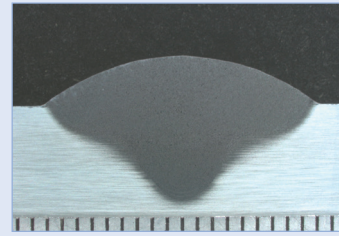
- Excellent arc stability
- Excellent wetting out characteristics
- Wider arc plasma allows larger gap and less demanding fit-up
- Less sensitive to arc voltage disruptions
- Certified homogenous mixture produces consistent results throughout the life of the cylinder
- More versatile than 100% Argon, He-25 can also be applied in fabrication with copper, magnesium, titanium, zirconium, and nickel-steel alloys (ask about application advantages on these materials)



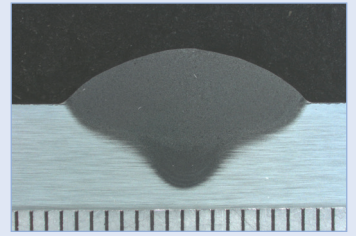
All MATHESON *Select*® Shielding Gas Mixtures are certified to AWS A5.32 and ISO 14.175 Standards - the best choice for mixture quality, welding efficiency, and to ensure compliance in certified welding operations.

Spray Arc

MATHESON *Select*® He-25

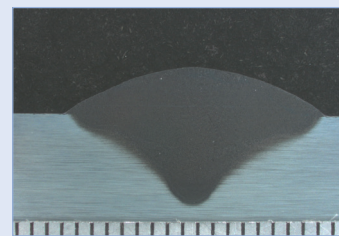


100% Argon

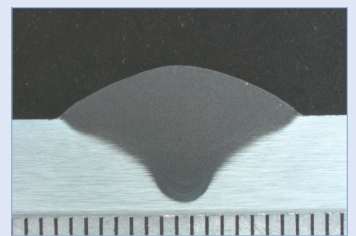


Pulsed Spray Arc

MATHESON *Select*® He-25



100% Argon



*These cross-section photographs compare welds on aluminum made using MATHESON *Select*® He-25 (left) and 100% Argon (right). The top set of welds shows Normal Spray Arc; with Pulsed Spray Arc on the bottom. Improved weld shape and penetration with MATHESON *Select*® He-25 are apparent when using either Normal or Pulsed Spray.*

Tel: 877-684-4427
Email: info@mathesongas.com
www.mathesongas.com
Printed in USA TB166 4/2021



American Welding Society
Sustaining Company Member



MATHESON
The Gas Professionals

Copyright 2021 Matheson Tri-Gas, Inc. All Rights Reserved.
All contents of this document are subject to change without notice and do not represent a commitment on the part of Matheson Tri-Gas, Inc. Every effort is made to ensure the accuracy of this information. However, due to differences in actual and ongoing operational processes and product improvements and revisions, Matheson Tri-Gas, Inc. cannot guarantee the accuracy of this material, nor can it accept responsibility for errors or omissions. This document is intended to serve as a general orientation and cannot be relied upon for a specific operation. No warranties of any nature are extended by the information contained in these copyrighted materials.
All names, products, and services mentioned herein are the trademarks or registered trademarks of their respective organizations and are the sole property of their respective owners. Matheson and the Matheson logo are registered trademarks of Matheson Tri-Gas, Inc.