

# TECHALLOY® 686

Nickel ▪ AWS ERNiCrMo-14

## KEY FEATURES

- Used for TIG, MIG and SAW welding of base materials such as ASTM B574, B575, B619, B622, and B628 having a UNS number of N06686
- Suitable for highly acidic and high heat environments
- Q2 Lot® - Certificate showing actual deposit composition available online

## WELDING POSITIONS

All

## RECOMMENDED FLUX

SAW P2000

## CONFORMANCES

**AWS A5.14M: 2018**  
UNS

ERNiCrMo-14  
N06686

## TYPICAL APPLICATIONS

- Typically used in pollution control (flue gas desulfurization), chemical processing, power generation, pulp and paper manufacturing and waste management

## SHIELDING GAS

**MIG** 75% Ar / 25% He, 100% Ar  
**TIG** 100% Ar

## DIAMETERS / PACKAGING

| Diameter<br>in (mm) | MIG<br>33 lb (15 kg) Steel Spool | TIG<br>10 lb (4.5 kg) Tube<br>30 lb (13.6 kg) Master Carton | SAW<br>55 lb (25 kg) Coil |
|---------------------|----------------------------------|-------------------------------------------------------------|---------------------------|
| 0.035 (0.9)         | MG686035667                      |                                                             |                           |
| 0.045 (1.1)         | MG686045667                      |                                                             |                           |
| 1/16 (1.6)          | MG686062667                      | TG686062638                                                 |                           |
| 3/32 (2.4)          |                                  | TG686093638                                                 | SA686093726               |
| 1/8 (3.2)           |                                  | TG686125638                                                 | SA686125726               |

## WIRE COMPOSITION<sup>(1)</sup> – As Required per AWS A5.14M: 2018

|                                        | %C        | %Mn     | %Fe  | %P        | %S      | %Si  |
|----------------------------------------|-----------|---------|------|-----------|---------|------|
| <b>Requirements</b><br>AWS ERNiCrMo-14 | 0.01      | 1.0     | 5.0  | 0.02      | 0.02    | 0.08 |
|                                        | %Mo       | %Ni     | %Ti  | %Cr       | %W      |      |
| <b>Requirements</b><br>AWS ERNiCrMo-14 | 15.0-17.0 | Balance | 0.25 | 19.0-23.0 | 3.0-4.4 |      |

## TYPICAL OPERATING PROCEDURES

| Process / Polarity | Diameter<br>in (mm)        | WFS                | Voltage<br>(volts) | Current<br>(Amps)  | Gas / Flux         |
|--------------------|----------------------------|--------------------|--------------------|--------------------|--------------------|
| <b>MIG / DC+</b>   | 0.035 (0.9)<br>0.045 (1.1) | 400-600<br>350-450 | 27-30<br>29-32     | 150-190<br>240-300 | 75% Ar / 25% He    |
| <b>SAW / DC+</b>   | 3/32 (2.4)<br>1/8 (3.2)    |                    | 28-30<br>29-33     | 275-350<br>350-450 | Lincolnweld® P2000 |

<sup>(1)</sup>Typical deposit composition  
Safety Data Sheets (SDS) are available on our website at [www.lincolnelectric.com](http://www.lincolnelectric.com)

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#### TEST RESULTS

Test results for mechanical properties, deposit or electrode composition and diffusible hydrogen levels were obtained from a weld produced and tested according to prescribed standards, and should not be assumed to be the expected results in a particular application or weldment. Actual results will vary depending on many factors, including, but not limited to, weld procedure, plate chemistry and temperature, weldment design and fabrication methods. Users are cautioned to confirm by qualification testing, or other appropriate means, the suitability of any welding consumable and procedure before use in the intended application.

#### CUSTOMER ASSISTANCE POLICY

The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

Lincoln Electric is a responsive manufacturer, but the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to [www.lincolnelectric.com](http://www.lincolnelectric.com) for any updated information.

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