CHROMET® 9-B9

Low Alloy, Low Hydrogen · AWS E9015-B91 H4

KEY FEATURES

- B9 (P91) alloyed steel: Modified 9CrMo designed to weld equivalent "type 91" 9CrMo steels modified with small additions of niobium, vanadium and nitrogen for improved long term creep resistance
- Moisture resistant coating provides low amounts of weld metal hydrogen levels for a superior weld
- Specifically designed for high integrity structural service at elevated temperature
- Weld metal chemistry is low in impurity elements allowing it to respect the X Factor (<15ppm) and J-factor (<120ppm)

CONFORMANCES

AWS A5.5:	E9015-B91 H4
BS EN ISO 3580-B:	E 6216-9C1MV

TYPICAL APPLICATIONS

- Main Steam Piping
- Oil Refineries
- Coal Liquefaction Plants Gasification Plants
- Power Generation Plants
- Turbine Castings

WELDING POSITIONS

All, except vertical down

DIAMETERS / PACKAGING

Diameter mm (in)	4.5 kg (10 lb) Easy Open Can	5 kg (11 lb) Easy Open Can	5.5 kg (12 lb) Easy Open Can
2.5 (3/32)	CH9B9-25-1		
3.2 (1/8)	CH9B9-32-1		
4.0 (5/32)		CH9B9-40-1	
5.0 (3/16)			CH9B9-50-1

MECHANICAL PROPERTIES[1] - As Required per AWS A5.5/A5.5M

	Yield Strength[2] MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft-lbf) @ 20°C (68°F)	Hardness HV10[4] @ PWHT
Requirements - AWS E9015-B91 H4	530 (77) min	620 (90) min	17 min	–	–
Typical Results[3]					
Room Temperature					
PWHT 2 hr @ 760°C (1400°F)	590 (86)	710 (103)	22	75 (55)	240
High Temperature					
550°C (1022°F)	>360 (52)	>450 (65)	–	–	–
600°C (1112°F)	>255 (37)	>375 (54)	–	–	–
650°C (1202°F)	>175 (25)	>285 (41)	–	–	–

DEPOSIT COMPOSITION[1] - As Required per AWS A5.5/A5.5M

	%C	%Mn[5]	%Si[5]	%S	%P	%Cr	
Requirements - AWS E9015-B91 H4	0.08 - 0.12	0.40 - 0.75	0.30 max	0.01 max	0.01 max	8.0 - 10.0	
Typical Results[3]	0.10	0.55	0.25	<0.01	<0.01	9.0	
	%Ni[5]	**%Mo**	**%Nb**	**%V**	**%Cu**	**%Al**	**%N**
Requirements - AWS E9015-B91 H4	0.2 - 0.4	0.85 - 1.20	0.03 - 0.07	0.15 - 0.25	0.25 max	0.04 max	0.03-0.07
Typical Results[3]	0.3	1.00	0.04	0.20	0.05	0.01	0.05

[1]Typical all weld metal. [2]Measured with 0.2% offset. [3]See test results disclaimer [4]Industry specific data, not required by AWS.
[5]Ni + Mn < 1.0%. Nickel is below 0.4% (as parent metal) although AWS allows up to 1.0%Ni. See Chromet 9MV-N or Chromet 9MVN+ for variant with 0.4 - 1.0%Ni conforming to EN ISO specification.
NOTE: Additional test data available upon request.

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m^3 maximum exposure guideline for general welding fume.

BEFORE USE, READ AND UNDERSTAND THE SAFETY DATA SHEET (SDS) FOR THIS PRODUCT AND SPECIFIC INFORMATION PRINTED ON THE PRODUCT CONTAINER.

TYPICAL OPERATING PROCEDURES

Polarity	Current (Amps)			
	2.5mm (3/32in)	3.2mm (1/8in)	4.0mm (5/32in)	5.0mm (3/16in)
DC+ or AC	70 - 110	80 - 140	100 - 180	140 - 240

Safety Data Sheets (SDS) and Certificates of Conformance are available on our website at www.lincolnelectric.com

FUMES AND GASES can be hazardous to your health.

- Fumes from the normal use of this product contain significant quantities of potentially hazardous compounds. See consumable product label/insert.
- Keep your head out of the fumes.
- Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and the general area.
- An approved respirator should be used unless exposure assessments are below applicable exposure limits.

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 for any updated information.

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THE LINCOLN ELECTRIC COMPANY
22801 St. Clair Avenue ▪ Cleveland, OH ▪ 44117-1199 ▪ U.S.A.
Phone: +1.216.481.8100 ▪ www.lincolnelectric.com