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# SUCKER ROD PRODUCT DATASHEET

## **EH9**



V. 2017



## Exceed EH9 Anti-Corrosion High Strength Sucker Rod

### Product Overview

Material	Exceed Chromium Special Alloy Steel
Heat-treatment Method	Normalized and Tempered
Suitable Application and Environment	Heavy Loading / Extreme Corrosive Environment

### Specifications

#### Mechanical Properties

Tensile Strength		Yield		Fatigue Strength		Elongation	Reduction
Ksi	Mpa	Ksi	Mpa	$\sigma_{0.1}$ MPa	cycles	2", %	%
145-167	1000-1150	≥115	≥793	540	≥1x10 <sup>6</sup>	≥10	≥45

#### Corrosion and Abrasion Resistance

Test Condition	Corrosion Rate	Abrasion Rate
H <sub>2</sub> S - 0.1 Mpa	≤0.04mm/yr	≤0.306g/m <sup>2</sup> •hr
CO <sub>2</sub> - 2.0 Mpa	≤0.06mm/yr	≤0.306g/m <sup>2</sup> •hr
Brine <sup>(1)</sup> - 120,000ppm	≤0.03mm/yr	≤0.306g/m <sup>2</sup> •hr

Note (1): Ca<sup>2+</sup>, Cl<sup>-</sup>, Mg<sup>2+</sup>, SO<sub>4</sub><sup>2-</sup>, HCO<sub>3</sub><sup>-</sup>, Na<sup>+</sup>

#### Chemical Composition

Al	C	Cr	Cu	Mn	Mo	Ni	P	Si	S
0.06 Max	0.07 Max.	11.0- 12.0	0.30- 0.40	0.80- 1.00	0.15- 0.25	0.80- 1.00	0.025 Max	0.05 Max	0.01 Max

### Application and Technical Note

1. The Chromium Special Alloy Steel is an innovative new material for sucker rod production. With 10% chromium, very low carbon, nickel, and molybdenum content, its corrosion resisting property is similar to standard nickel based stainless steels (316L, 304), yet it offers mechanical performance as good as CrMoA alloys.
2. Made with the Chromium Special Alloy Steel, EH9 delivers far superior performance in corrosive environment than standard products made from conventional materials. It's also



abrasion resisting. This can significantly reduce adhesion corrosion and tubing wear particularly in deviated wells, thus improve tubing life.

3. Compared to various coating solutions, EH9's anti-corrosion mechanism is in its base material. Therefore, inevitable scratches and scrapes during work-over operation would not create weak point and compromise its anti-corrosion ability.
4. EH9 meets the tensile and other requirements of a wide range of conditions including heavy loaded deep deviated well.

### **General Information**

Exceed EH9 sucker rod is manufactured from Chromium Special Alloy Steel for extreme corrosive environment and high loading applications. It is produced with fully automated process and is 100% inspected to meet API-11B specification. All products are covered by Exceed standard product warranty. All products are coated with rust inhibitors, packaged in bundles with protective paraphernalia for sea-worthy transportation.

