



# LINK WELDING TECHNOLOGY CO., LIMITED

12I, GREEN BUILDING, NO.2 HUANLIN, MEILIN STREET, FUTIAN DISTRICT, SHENZHEN, CHINA 518049

Tel: 0086-755-84869452 Email: info@linkwelding.com www.linkwelding.com

## Certificate of Quality

Customer: "GCE Krass" LLC					PI NO.: 2019WQTB0340Y				
Product: Tungsten Electrode For TIG Welding					Total Quantity: 46630PCS				
<b>1) CHEMICAL COMPOSITIONS</b>									
<b>WT20 (1.80%-2.20%) Thoriated tungsten, red color tip</b>									
All other ≤ 0.1									
Al (%)	Ca (%)	Fe (%)	S (%)	P (%)	Mo (%)	As (%)	K (%)	W (%)	ThO <sub>2</sub> (%)
≤ 0.0005	≤ 0.0005	≤ 0.002	≤ 0.001	≤ 0.001	≤ 0.0005	≤ 0.001	≤ 0.0015	≥ 97.92	1.8-2.2
<b>WC20 (1.80%-2.20%) Ceriated tungsten, grey color tip</b>									
All other ≤ 0.1									
Al (%)	Ca (%)	Fe (%)	S (%)	P (%)	Mo (%)	As (%)	K (%)	W (%)	CeO <sub>2</sub> (%)
≤ 0.0005	≤ 0.0005	≤ 0.002	≤ 0.001	≤ 0.001	≤ 0.0005	≤ 0.001	≤ 0.0015	≥ 97.89	1.8-2.2
<b>WL15 (1.30%-1.70%) Lanthanated tungsten, gold color tip</b>									
All other ≤ 0.1									
Al (%)	Ca (%)	Fe (%)	S (%)	P (%)	Mo (%)	As (%)	K (%)	W (%)	LaO <sub>2</sub> (%)
≤ 0.0005	≤ 0.0005	≤ 0.002	≤ 0.001	≤ 0.001	≤ 0.0005	≤ 0.001	≤ 0.0015	≥ 98.42	1.4-1.6
<b>WL20 (1.80%-2.20%) Lanthanated tungsten, blue color tip</b>									
All other ≤ 0.1									
Al (%)	Ca (%)	Fe (%)	S (%)	P (%)	Mo (%)	As (%)	K (%)	W (%)	LaO <sub>2</sub> (%)
≤ 0.0005	≤ 0.0005	≤ 0.002	≤ 0.001	≤ 0.001	≤ 0.0005	≤ 0.001	≤ 0.0015	≥ 97.92	1.8-2.2
<b>WP Pure tungsten, green color tip</b>									
All other ≤ 0.1									
Al (%)	Ca (%)	Fe (%)	S (%)	P (%)	Mo (%)	As (%)	K (%)	W (%)	
≤ 0.0005	≤ 0.0005	≤ 0.002	≤ 0.001	≤ 0.001	≤ 0.0005	≤ 0.001	≤ 0.0015	≥ 99.95	
<b>WZr8 (0.60%-1.00%) Zirconiated tungsten, white color tip</b>									
All other ≤ 0.1									
Al (%)	Ca (%)	Fe (%)	S (%)	P (%)	Mo (%)	As (%)	K (%)	W (%)	ZrO <sub>2</sub> (%)
≤ 0.0005	≤ 0.0005	≤ 0.002	≤ 0.001	≤ 0.001	≤ 0.0005	≤ 0.001	≤ 0.0015	≥ 99.12	0.78
<b>WY2 (1.80%-2.20%) Yttrium tungsten, skyblue color tip</b>									
All other ≤ 0.1									



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Al(%)	Ca (%)	Fe(%)	S (%)	P(%)	Mo (%)	As (%)	K(%)	W(%)	ZrO2 (%)
≤0.0005	≤0.0005	≤0.002	≤0.001	≤0.001	≤0.0005	≤0.001	≤0.0015	≥97.92	1.8-2.2

## 2) APPEARANCE AND SIZE (QUANTITY CHECKED : ALL ELECTRODES)

### QUALIFIED RATE OF INSPECTION

DIAMETER	LENGTH	SURFACE	STRAIGHTNESS	CRACK DETECTION
100%	100%	GROUND FINISH	100%	100%

## 3) TOLERANCE OF SIZE

RESULTS	DIAMETER	LENGTH
MAX.	(+0.03)mm	(+0.5)mm
MIN.	(-0.03)mm	(-0.5)mm

## 4) STRENGTH (DROP TESTING): PASS

## 5) RESULT OF EXAMINATION : CONFORM TO STANDARD ISO 6848-2004E & ANSI/AWS 5.12-98

PERSON-IN-CHARGE OF QUALITY EXAMINATION:



*Chris*