

아래 Lot에서 (0.02 kg)을
CCM ϕ 6.04 (으)로
2019년(월) 일 출고를 확인합니다.
Dynamet (A Carpenter Company) 한국공식대리점
코네티컷알래스(주) TEL.031-434-8624

CERTIFICATE OF TESTS ABNAHMEPRUEFZEUGNIS CERTIFICAT DE CONTROLE



CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel: (610) 208-2000 (800) 338-4592

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06/23/19
CUSTOMER / BESTELLER / CLIENT

SELLER / VERKÄUFER / VENDEUR PAGE 1 OF 3

SIGMAGRAFT INC

575 SALLY PLACE
FULLERTON CA 92831

RAN

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
SGKD190110 LINE 2	W91480	06/23/19	175.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE: 175242

PRODUCT DESCRIPTION: MICRO-MELT BIODUR CARPENTER CCM ALLOY UNANNEALED GROUND
----- IMPLANT QUAL

SPECIFICATION: ASTM-F1537-11 ALLOY 1 WARM WORKED

SIZE 0.237700 IN. (6.04 MM) RD BAR INGOT 5

HEAT CHEMISTRY(WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

C 0.039	MN 0.69	SI 0.67	P LT .001	S 0.001	CR 28.11
NI 0.01	MO 5.36	CU LT .01	CO 64.86	AL 0.01	N 0.20
TI LT .010	CB 0.001	W LT .01	O 0.02	B LT .001	FE 0.04

RES TOT

MATERIAL ULTRASONICALLY INSPECTED, IMMERSION METHOD, PER AMS 2630 CLASS A1 - ACCEPTABLE

HARDNESS AS SHIPPED, HRC - 48 (MIDRADIUS)

(T)RANSVERSE (L)ONGITUDINAL	L	L
YIELD STRENGTH, (0.20%) KSI(MPA)	156.0 (1076)	153.0 (1054)
TENSILE STRENGTH, KSI(MPA)	215.0 (1482)	213.0 (1468)
ELONGATION IN 60", %	34.0	39.0
REDUCTION OF AREA, %	28.0	33.0

GRAIN SIZE PER ASTM E112: 12
5 ML H2O2 (30%), 100 ML HCL

CONTINUED ON NEXT PAGE

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아래 Lot에서 10.02 kg을
CCM 06.04 (으)로
2019년 11월 21일 출고를 확인합니다.
Dynamet (A Carpenter Company) 한국공식대리점
코네티컷앰에스(주) TEL. 031-434-8624

CERTIFICATE OF TESTS ABNAHMEPRUEFZEUGNIS CERTIFICAT DE CONTROLE

CERT SERIAL# 001164761
CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
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06/23/19
CUSTOMER / BESTELLER / CLIENT

SELLER / VERKÄUFER / VENDEUR PAGE 2 OF 3

SIGMAGRAFT INC
575 SALLY PLACE
FULLERTON CA 92831

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CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
SGKD190110 LINE 2	W91480	06/23/19	175.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE: 175242
MATERIAL ULTRASONICALLY INSPECTED, IMMERSION METHOD, PER AMS 2630 CLASS A1 -
ACCEPTABLE PER CARPENTER PROCEDURE: B-UT-1-604 REV 5, TECHNICAL
ADDENDUM 72

ULTRASONIC DATA
EQUIPMENT DATA:

CHANNEL	INSTR ID	TRANSDUCER ID				ALARM % OF CAL	WATER PATH	BACK REFLECT	REJECT % OF CAL
01	2103	08A554				50	1.58	80	50
02	2103	H11209	.264	.125	.031	50	.81		
03	2103	09D1323			.004	38	.56		
04	2103	09D1321			.004	38	.57		
05	2103	839639			.004	25	.77		
06	2103	839641			.004	25	.75		

RCB NO: T 9624
SCANNING SPEED: 200 SURF FT/MIN

INSPECTION DATA:
PROC. NO: U604R05 TA72R00

INSPECTOR: A TETER LEVEL: II DATE: 06/17/19

MATERIAL HAS BEEN MELTED AND MANUFACTURED IN THE USA WHICH IS A QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1, SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009.

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원본대조필



FORM E2-554

아래 Lot에서 17,02 kg을
CCM ϕ 6.04 (으로
2019년 11월 21일 출고를 확인합니다.
Dynamet (A Carpenter Company) 한국공식대리점
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SELLER / VERKÄUFER / VENDEUR PAGE 3 OF 3

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UNLESS OTHERWISE STATED, THE TEST WERE PERFORMED TO THE LATEST REVISION OF THE STANDARDS LISTED BELOW: 1) BEND TEST - ASTM E290, 2) CHARPY IMPACT - ASTM E23, 3) COEFFICIENT OF LINEAR THERMAL EXPANSION - ASTM E228, 4) FRACTURE TOUGHNESS - ASTM E399, 5) BRINELL HARDNESS - ASTM E10, 6) ROCKWELL HARDNESS - ASTM E18, 7) MICRO VICKERS HARDNESS - ASTM E92, 8) KNOOP HARDNESS - ASTM E92, 9) MACRO VICKERS HARDNESS - ASTM E92, 10) STRESS RUPTURE / CREEP RUPTURE - ASTM E139, 11) STRESS RUPTURE (COMBINATION) - ASTM E292, 12) ROOM TEMPERATURE TENSILE - ASTM E8, 13) ELEVATED ROOM TEMPERATURE TENSILE - ASTM E21, 14) DECARBURIZATION - ASTM E1077, 15) DELTA FERRITE AMS 2315, 16) GRAIN SIZE - ASTM E112, 17) INCLUSION CONTENT / MICROCLEANLINESS - ASTM E45, 18) INTERGRANULAR ATTACH - ASTM A262, 19) INTERGRANULAR CORROSION - ASTM A262, 20) MACRO ETCH & TESTING - ASTM A604/E381, 21) PITTING CORROSION - ASTM A923, 22) CREVICE CORROSION - ASTM G48, 23) HARDNESS CONVERSIONS - ASTM E140, 24) XRF - ASTM E572/E1085/E2465, 25) OES - ASTM E415/E1086, 26) COM - ASTM E1019, 27) FUS - ASTM E1019, 28) MS - CARPENTER METHODS 206.8500/206.8530
THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL, REVISION 36 DATED 12/15/2017.

CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED TO ISO 9001, AS9100, AND AS9120. THIS CERTIFICATION OF TEST IS TYPE 3.1 PREPARED IN ACCORDANCE WITH EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS, AS DOCUMENTED IN THIS CERTIFICATE OF TESTS.

TEST METHODS ARE PER THE ASTM STANDARDS ON FILE AND IN EFFECT AT TIME OF ORDER ACCEPTANCE, STANDARD PRACTICES, OR AS AGREED UPON BETWEEN CARPENTER & CUSTOMER.

JORDAN BEHM
ADMINISTRATOR I - QUALITY
CARPENTER TECHNOLOGY CORPORATION

Jordan Behm

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원본대조필

코덴트티엑스
한국공식대리점

FORM E2-546