McMASTER-CARR®

Certificate

330-995-5500
330-995-9600 (fax)
cle.sales@mcmaster.com

Purchase Order	Order Date	Placed By	McMaster-Carr Number	Number of Certificates
P1501517	1/26/2024	Jane Beattey	7092424-03	1

Line		Product	Ordered	Status	Certificate
4	8911K328	932 Bearing Bronze Tube, 1/4" Wall Thickness, 2" OD, 13" Long	2 each	2 each deliver January 29	228–5605

Your order is subject only to our terms and conditions, available at www.mcmaster.com or from our Sales Department.

CERTIFICATE OF ANALYSIS

CONCAST® METAL PRODUCTS CO.

THE FOLLOWING MATERIAL IS CERTIFIED TO:

PO BOX 816 - MARS, PA 16046

November 28 , 2023

McMaster-Carr Supply Co.
600 North County Line Road
P.O. Box 1207
Elmhurst, IL 60126-1207
Attn: Quality Control Department

GENERAL PRODUCT INFORMATION

Heat#: 2313771

Manufacture Date: 11/10/23
Alloy: 932
Shape: TUBE
Size#: 1 1/2 X 2
Internal Standards: ASTM B505

Customer PO#: TA-17897450
Customer Job#:
Customer Part#: 628
Control#:
Date Shipped: 11/28/23
Quantity Shipped: 16
Weight Shipped: 117.00
Packslip#: 366417
Invoice#: 0
Country of Origin: UNITED STATES

CHEMICAL ANALYSIS

		DEFINED BY SPECIFICATION Minimum		Maximum	MEASURED IN LABORATORY
**	**Cu**	81.0000	-	85.0000	81.5660
	Sn	6.3000	-	7.5000	6.5050
	Pb	6.0000	-	8.0000	7.3670
	Zn	2.0000	-	4.0000	3.4540
	Fe	0.0000	-	0.2000	0.0740
	Ni	0.0000	-	1.0000	0.6710
	SB	0.0000	-	0.3500	0.2330
	P	0.0000	-	1.5000	0.0820
	S	0.0000	-	0.0800	0.0430
	Al	0.0000	-	0.0050	0.0030
	Si	0.0000	-	0.0050	0.0020

** In determining copper minimum, copper may be calculated as copper plus nickel

Physical Analysis *	Yield .5% UNDER LOAD (PSI)	N/mm²	Tensile (PSI)	N/mm²	Elongation in 4D or 2 in. min %	Brinell Hardness BRINELL 500
Defined By Specification	**20000**	**137.9**	**35000**	**241.3**	**10**	**0 - 0**

This is to certify that all material listed is free from mercury contamination and no mercury bearing equipment was used in any of our manufacturing, fabricating, assembly or testing operations. No materials containing Class I or Class II ODC's; CFC's; Halons or HCFC's are used in our manufacturing process. None of the EPA's listed ODC's are used in our testing, assembly or fabricating procedures. Additionally we do not purchase, from our suppliers, any of the EPA's listed ODC's. * Minimum tensile and yield strength shall be reduced 10% for cast bars having a thickness, diameter, cross section or wall of 4" or more. All Nickel measurements are inclusive of Cobalt concentrations.

CERTIFICATE NO.'S
25513/A/0001/AN/En
32119/A/0001/UK/En

CONCAST METAL PRODUCTS

Jared D. Goran
Lab Manager