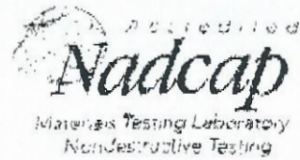


LABORATORY TESTING INC.

2331 Topaz Drive, Hatfield, PA 19440
TEL: 800-219-9095 • FAX: 800-219-9096

SOLD TO
Taconic Wire
250 Totoket Road
North Branford, CT 06471

Certified Test Program
TWI003-09-01-03132-1



SHIP TO
Taconic Wire
250 Totoket Road
North Branford, CT 06471
ATTN: Anthony Candolara

CUSTOMER P. O. CREDIT CARD

CERTIFICATION DATE
3/20/09

SHIP VIA
FAX AND MAIL

DESCRIPTION

Quantity Description
IQAIP WIRE

*AMENDED CERTIFICATION: 3/20/09

*Two pieces of the referenced samples were submitted to chemical content evaluation for Total Lead and (2) pieces were found to be in conformance to Customer Requirements with the following results:

<u>ELEMENT</u>	<u>REQUIREMENTS</u>		<u>SAMPLE 1</u>	<u>SAMPLE 2</u>
	<u>MIN</u>	<u>MAX</u>	<u>WIRE SUBSTRATE</u>	<u>WIRE SUBSTRATE</u>
*Total Pb (Lead)		300	2. ppm	<1. ppm

Procedures/Methods: MAS-TM-GFAA, Rev. 4, Trace Metals by GFAA IAW ASTM E 1184

*NOTE: Phthalates were NOT tested for as they are not found in steel products.

The services performed above were done in accordance with LT's Quality System Program Manual Revision 18 dated 7/27/07 and ISO/IEC 17025. These results relate only to the items tested and this report shall not be reproduced, except in full, without the written approval of Laboratory Testing, Inc. (L.T.I.) is accredited by PRT to ISO 17025 and by Nadcap for NDT and Materials Testing for the test methods and specific services as listed in the Scopes of Accreditation available at www.aetesting.com and www.auditnet.com. The results reported on this test report represent the actual attributes of the material tested and indicate full compliance with all applicable specification and contract requirements.

MERCURY CONTAMINATION: During the testing and inspection, the product did not come in direct contact with mercury or any of its compounds nor with any mercury containing devices employing a single boundary of containment.

NOTE: The recording of false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under Federal Statutes.

Sherr L. Scheifele
QA Specialist

By: _____
Authorized Signature



SCIENTIFIC CONTROL LABORATORIES, INC.
TESTING - CONSULTING

Mr. Don Marshalek
Techstrand, Inc.
17730 Chicago Ave.
Lansing, IL 60438

COPPER PLATED PINS

Lab No.: 2009020296A
Inception: Feb 24, 2009
Report Date: Feb 24, 2009

Test Type: Lead

SAMPLE IDENTIFICATION:

Copper coated wire sample.

PROCEDURE:

The sample was weighed and then stripped in dilute HCl / HNO₃. The part was removed, rinsed, dried, and re-weighed to obtain the weight of coating. The solution was then brought to 25 mL with deionized water and analyzed for lead via atomic absorption spectroscopy.

RESULTS:

Sample ID	Lead (Pb)
Copper Coated	153 ppm


Respectfully Submitted,

Scientific Control Laboratories, Inc.

KW:kw

Kevin Wasag, Materials Eng.
Laboratory Manager, x19

Note: It is our policy to keep copies of reports for six months. The data is kept on file for up to three years. Samples (if applicable) are kept for three weeks. Samples that are hazardous will be returned to the client. If this policy poses a difficulty, please contact us to make other arrangements. If reproduced, our report must be reproduced completely. Any unauthorized alteration of this report invalidates the content.

	Safety Data Sheet LD Iron Wire copper plated Inter Wire	Page 1 of 4 Date: 02.02.2015
---	--	---------------------------------

1. Material Identification

- **Product Name:**
Iron wire, copper-plated
- **Trade Name:**

low carbon wire acc. DIN EN ISO 16120-2

Art	Article name	Tensile strength in N/mm / kpsi
C2D	LD Low Carbon Wire copper coated 0,91mm (.036")	827-1000 / 120/145
	LD Low Carbon Wire copper coated 1,02mm (.036")	690-896 / 110/130
C4D	LD Low Carbon Wire copper coated 0,84mm (.033")	689-827 / 100/120
	LD Low Carbon Wire copper coated 0,91mm (.036")	1006-1069 / 146/155
	LD Low Carbon Wire copper coated 1,27mm (.050")	724-896 / 105/125

- **Producer:**

Drahtwerk Friedr. Lötters GmbH & Co. KG
Hellestraße 40
D-58675 Hemer-Bredenbruch

phone +49 2372 86090
fax +49 2372 860911

2. Material Ingredient

- Description: C4D material No. 1.0300

<i>name</i>	<i>content</i>	<i>element</i>
iron	main metal	Fe
carbon	≤ 0,06	C
silicon	≤ 0,30	Si
manganese	0,30 to 0,60	Mn
phosphorus	max. 0,035	P
sulfur	max. 0,035	S
chrome	max. 0,20	Cr
nickel	max. 0,25	Ni
copper	max. 0,30	Cu

2.1 Material Ingredient

- Discription: C2D material No. 1.1185

Name	content	element
Eisen	Grundmetall	Fe
Silizium	max. 0,03	Si
Mangan	0,20 bis 0,35	Mn
Phosphor	max. 0,020	P
Schwefel	max. 0,015	S
Kupfer	max. 0,30	Cu
Kohlenstoff	≤ 0,02	C
Chrom	max 0,07	Cr
Nickel	max 0,05	Ni

3. Physical Data

Boiling point	NA*
Melting point	above 2500 °F
Vapor pressure	NA
Evaporation rate	NA
Vapor density	NA
Solubility in water	insoluble
Specific gravity	GT 7,5-8,5 g/cm ³
Volatile by volume	NA
Evaporation rate	NA
Auto-ignition temp.	NA

* not applicable

4. Fire and Explosion Hazard Data

Iron wire in the solid state present no fire and explosion hazard.

5. Reactivity Data

Stability:	Stable under normal conditions of use, storage and transport, except at extreme heat (above 2750 °F)
Incompatibility:	React with strong acid to release hydrogen
Hazardous	
Decomposition Products:	At temperatures above the melting point, may release fumes containing oxides of iron, alloying and coating elements.

6. Health Hazard Data

Low carbon wire under normal conditions do not present an inhalation, ingestion or contact health hazard. However, operations, such as buring, welding, sawing, brazing, grinding and possibly machining, etc., which result in elevating the temperature of the product to our above the melting point or result in the generation of airborne particles, may present health hazards. The above operations should be performed in well ventilated areas. The major exposure hazard is inhalation.

The effects of overexposure are as follows:

- Acute: Excessive inhalation of metallic fumes and dusts may result in irritation of eyes, nose and throat. The inhalation of high concentration various metal fumes or extremely fine metal dusts at or near to their source can cause an acute reaction known as metal fume fever. Also, metals such as copper and zinc have been most frequently associated with metal fume fever.

This condition can also be caused by the inhalation of iron, manganese, nickel and zinc fumes or dust. The symptoms consist of temporary chills and fever which may last from a few hours to a full day; characteristic outbreaks of perspiration, coughing, chest pains. Long-term effects of metal fume fever on healthy individuals have not been noted.

- Chronic: Chronic and prolonged inhalation of high concentrations of fumes or dust of the following elements may lead to the condition listed opposite to the following elements.

Iron (iron oxide):	Pulmonary effects, siderosis
Manganese:	Bronchitis, pneumonitis, lack of coordination
Phosphorus:	Necrosis of the mandible
Sulfur:	Edema of the lungs
(as sulfur dioxide)	
Aluminium:	May initiate fibrotic changes to lung tissue
Silicon:	Silicosis

Emergency and first aid procedures:

For overexposure to airborne fumes and particles, remove exposed persons to fresh air. If breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated. Seek medical attention promptly.

7. Spill Or Leak Procedures

- Not applicable on iron wire in the solid state.

8. Special Protection Information

Respiratory: NIOSH/MSHA-approved dust and fume respirators should be used to avoid excessive inhalation of particles. Appropriate respirator election depends on the magnitude of exposure.

Skin: Protective gloves should be worn as required for welding, during or handling operations.

Eye: Use safety glasses or goggles as required for welding, burning, awing, brazing, grinding or machining operations.

Other protective equipment: Depending upon the conditions of use and specific work situations, additional protective equipment and/or clothing may be required to control exposures.

• **Important Note**


Pay attention to M.S.D.S. of other products and/or materials involved in the process operation such as M.S.D.S. of welding electrodes coating, etc.

Compliance with all applicable federal state and local laws and regulations remains in the responsibility of the user.

9. Special Precautions

- Precautions to be taken in handling and storage:

Operations with the potential for generating high concentrations of airborne particles should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dusts.

	Safety Data Sheet LD Iron Wire copper plated Inter Wire	Page 4 of 4 Date: 02.02.2015
---	--	---------------------------------

- Precautions to be taken in processing operations:

Good housekeeping practices should be maintained at all times in the work area.

Safety and working equipment should be maintained in good condition.

During processing operations it is possible that hazardous amounts of fume or dust may be generated. It is advised that your particular operation be evaluated by a competent health professional/hygienist to determine whether or not health hazard exists and to evaluate precautions.

- Other comments:

The light film of corrosion-preventing oil or organic lubricant may be vaporized or decomposed by heating operations. The decomposition products can be carbon oxide, carbon dioxide and different kinds of cracking substances. The composition of the volatile products is depending on the conditions of reaction. In such cases the protection stated on page 4, item 8, should be observed.

- No other additional comments are believed to be necessary for these products.

The information provided in this M.S.D.S. has been compiled from our experience and data presented in various technical publications. It is the user's responsibility to determine the suitability to this information for use of safety precautions, M.S.D.S. revisions are the right of the manufacturer – with the user responsible for obtaining the latest issue.

Disclaimer

Manufacturer makes no warranties, express or implied, including, but not limited to, implied warranties of merchantability and fitness for a particular purpose:

The information contained in the Material Safety Data Sheet (M.S.D.S.) is believed to be correct; but no representations, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications, hazards connected with the use of the material or the results to be obtained from the use thereof. User assumes all risks and liabilities of any use, processing or handling of any material. Variations in methods, conditions, equipment used to store, handle or process the material and hazards connected with the use of the material are solecution. This M.S.D.S. is intended to be used solely for the purpose of satisfying informational requests made pursuant to that requirement. It is not intended to pre-empt, replace or expand the terms contained in Manufacture Conditions of Sale. Compliance with all applicable federal, state and local laws and regulations remains the responsibility of the user, and the user has the responsibility to provide a safe workplace, to examine all aspects of its operation, and to determine of or where precautions, in addition to those described herein, are required.