



NORILSK NICKEL HARJAVALTA Oy

Steinweg Hartel Terminal
Beerweg 301
3199 LM ROTTERDAM
NETHERLANDS

Certificate of Analysis

Date
19.01.2015
Delivery item/date
810013714 000030 / 16.01.2015
Order item/date
10011661 000050 / 15.01.2015
Customer number
700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 43531 / Quantity 25.288 KG

Characteristic	Unit	Result	Specification
Co	ppm	0,0186	
Fe	ppm	0,0001	
Cu	ppm	0,0004	
Zn	ppm	< 0,0001	
Mn	ppm	< 0,0001	
Ca	ppm	< 0,0001	
Al	ppm	< 0,0001	
Cr	ppm	< 0,0001	
Cd	ppm	0,0001	
Pb	ppm	< 0,0001	
Se	ppm	< 0,0001	
P	ppm	< 0,0002	
As	ppm	0,0001	
Si	ppm	< 0,0005	
Sb	ppm	< 0,0004	
C	ppm	0,0008	
S	ppm	0,0003	
Bi	ppm	< 0,0010	
Sn	ppm	< 0,0004	

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3199 LM ROTTERDAM
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Certificate of Analysis

Date
16.01.2015
Delivery item/date
810013701 000010 / 16.01.2015
Order item/date
10011661 000010 / 15.01.2015
Customer number
700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 43601 / Quantity 25.453 KG

Characteristic	Unit	Result	Specification
Co	‰	0,0363	
Fe	‰	< 0,0001	
Cu	‰	0,0003	
Zn	‰	< 0,0001	
Mn	‰	< 0,0001	
Ca	‰	< 0,0001	
Al	‰	< 0,0001	
Cr	‰	< 0,0001	
Cd	‰	0,0001	
Pb	‰	< 0,0001	
Se	‰	0,0001	
P	‰	< 0,0002	
As	‰	< 0,0001	
Si	‰	< 0,0005	
Sb	‰	< 0,0004	
C	‰	0,0018	
S	‰	0,0003	
Bi	‰	< 0,0010	
Sn	‰	< 0,0004	

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Certificate of Analysis

Date
 16.01.2015
 Delivery item/date
 810013704 000020 / 16.01.2015
 Order item/date
 10011662 000020 / 15.01.2015
 Customer number
 700511

Material:
 N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
 Ni min 99.9%
 Brand: Norilsk Nickel Harjavalta Cathodes

Batch 50072 / Quantity 25.286 KG

Characteristic	Unit	Result	Specification
Co	ppm	0,0215	
Fe	ppm	< 0,0001	
Cu	ppm	0,0006	
Zn	ppm	< 0,0001	
Mn	ppm	< 0,0001	
Ca	ppm	< 0,0001	
Al	ppm	< 0,0001	
Cr	ppm	< 0,0001	
Cd	ppm	< 0,0001	
Pb	ppm	< 0,0001	
Se	ppm	0,0001	
P	ppm	< 0,0002	
As	ppm	0,0001	
Si	ppm	< 0,0005	
Sb	ppm	< 0,0004	
C	ppm	0,0016	
S	ppm	0,0002	
Bi	ppm	< 0,0010	
Sn	ppm	< 0,0004	


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Date
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Order item/date
10011661 000020 / 15.01.2015
Customer number
700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 43591 / Quantity 25.489 KG

Characteristic	Unit	Result	Specification
Co	ppm	0,0243	
Fe	ppm	< 0,0001	
Cu	ppm	0,0003	
Zn	ppm	< 0,0001	
Mn	ppm	< 0,0001	
Ca	ppm	< 0,0001	
Al	ppm	< 0,0001	
Cr	ppm	< 0,0001	
Cd	ppm	0,0001	
Pb	ppm	< 0,0001	
Se	ppm	0,0002	
P	ppm	< 0,0002	
As	ppm	< 0,0001	
Si	ppm	< 0,0005	
Sb	ppm	< 0,0004	
C	ppm	0,0008	
S	ppm	0,0004	
Bi	ppm	< 0,0010	
Sn	ppm	< 0,0004	


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Certificate of Analysis

Date
23.01.2015
Delivery item/date
810013755 000010 / 16.01.2015
Order item/date
10011662 000120 / 15.01.2015
Customer number
700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 50151 / Quantity 25.546 KG

Characteristic	Unit	Result	Specification
Co	‰	0,0219	
Fe	‰	< 0,0001	
Cu	‰	0,0004	
Zn	‰	< 0,0001	
Mn	‰	< 0,0001	
Ca	‰	< 0,0001	
Al	‰	< 0,0001	
Cr	‰	< 0,0001	
Cd	‰	0,0001	
Pb	‰	0,0003	
Se	‰	0,0001	
P	‰	< 0,0002	
As	‰	< 0,0001	
Si	‰	< 0,0005	
Sb	‰	< 0,0004	
C	‰	0,0010	
S	‰	0,0002	
Bi	‰	< 0,0010	
Sn	‰	< 0,0004	


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Certificate of Analysis

Date
 23.01.2015
 Delivery item/date
 810013754 000030 / 16.01.2015
 Order item/date
 10011661 000150 / 15.01.2015
 Customer number
 700511

Material:
 N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
 Ni min 99.9%
 Brand: Norilsk Nickel Harjavalta Cathodes

Batch 43631 / Quantity 25.163 KG

Characteristic	Unit	Result	Specification
Co	‰	0,0252	
Fe	‰	< 0,0001	
Cu	‰	0,0004	
Zn	‰	< 0,0001	
Mn	‰	< 0,0001	
Ca	‰	< 0,0001	
Al	‰	< 0,0001	
Cr	‰	< 0,0001	
Cd	‰	0,0001	
Pb	‰	< 0,0001	
Se	‰	0,0002	
P	‰	< 0,0002	
As	‰	< 0,0001	
Si	‰	< 0,0005	
Sb	‰	< 0,0004	
C	‰	0,0014	
S	‰	0,0003	
Bi	‰	< 0,0010	
Sn	‰	< 0,0004	


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Certificate of Analysis	
Date	23.01.2015
Delivery item/date	810013754 000020 / 16.01.2015
Order item/date	10011661 000140 / 15.01.2015
Customer number	700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 43621 / Quantity 25.301 KG

Characteristic	Unit	Result	Specification
Co	%	0,0272	
Fe	%	0,0001	
Cu	%	0,0013	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	0,0003	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0020	
S	%	0,0004	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


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Date
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Order item/date
10011661 000130 / 15.01.2015
Customer number
700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 43632 / Quantity 25.159 KG

Characteristic	Unit	Result	Specification
Co	%	0,0249	
Fe	%	< 0,0001	
Cu	%	0,0004	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	< 0,0001	
Se	%	0,0001	
P	%	0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0013	
S	%	0,0005	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


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Certificate of Analysis

Date
26.01.2015
Delivery item/date
810013761 000010 / 16.01.2015
Order item/date
10011662 000140 / 15.01.2015
Customer number
700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 50132 / Quantity 25.196 KG

Characteristic	Unit	Result	Specification
Co	%	0,0206	
Fe	%	< 0,0001	
Cu	%	0,0003	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	< 0,0001	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0028	
S	%	0,0010	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


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Certificate of Analysis

Date
26.01.2015
Delivery item/date
810013762 000010 / 16.01.2015
Order item/date
10011661 000160 / 15.01.2015
Customer number
700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 43612 / Quantity 25.518 KG

Characteristic	Unit	Result	Specification
Co	%	0,0352	
Fe	%	0,0001	
Cu	%	0,0006	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	< 0,0001	
Pb	%	0,0003	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0018	
S	%	< 0,0002	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


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Certificate of Analysis	
Date	26.01.2015
Delivery item/date	810013762 000030 / 16.01.2015
Order item/date	10011661 000180 / 15.01.2015
Customer number	700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 50062 / Quantity 25.256 KG

Characteristic	Unit	Result	Specification
Co	%	0,0210	
Fe	%	0,0001	
Cu	%	0,0006	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	< 0,0001	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0027	
S	%	0,0005	
Bi	%	< 0,0010	
Sn	%	< 0,0004	



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Certificate of Analysis

Date
27.02.2015
Delivery item/date
810013956 000010 / 27.02.2015
Order item/date
10011813 000010 / 19.02.2015
Customer number
700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 50371 / Quantity 25.427 KG

Characteristic	Unit	Result	Specification
Co	%	0,0274	
Fe	%	0,0001	
Cu	%	0,0004	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	0,0002	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	< 0,0001	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0010	
S	%	< 0,0002	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


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Certificate of Analysis

Date
16.03.2015
Delivery item/date
810014061 000030 / 05.03.2015
Order item/date
10011815 000050 / 19.02.2015
Customer number
700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 50701 / Quantity 25.445 KG

Characteristic	Unit	Result	Specification
Co	%	0,0295	
Fe	%	< 0,0001	
Cu	%	0,0003	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	< 0,0001	
Se	%	0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0013	
S	%	0,0002	
Bi	%	< 0,0010	
Sn	%	< 0,0004	



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Certificate of Analysis

Date
07.05.2015
Delivery item/date
810014387 000020 / 30.04.2015
Order item/date
10012093 000090 / 29.04.2015
Customer number
700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 51171 / Quantity 25.141 KG

Characteristic	Unit	Result	Specification
Co	μg	0,0271	
Fe	μg	0,0001	
Cu	μg	0,0003	
Zn	μg	< 0,0001	
Mn	μg	< 0,0001	
Ca	μg	< 0,0001	
Al	μg	< 0,0001	
Cr	μg	< 0,0001	
Cd	μg	0,0001	
Pb	μg	< 0,0001	
Se	μg	< 0,0001	
P	μg	< 0,0002	
As	μg	< 0,0001	
Si	μg	< 0,0005	
Sb	μg	< 0,0004	
C	μg	0,0011	
S	μg	0,0009	
Bi	μg	< 0,0010	
Sn	μg	< 0,0004	

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Certificate of Analysis

Date
 12.05.2015
 Delivery item/date
 810014391 000020 / 30.04.2015
 Order item/date
 10012093 000110 / 29.04.2015
 Customer number
 700511

Material:
 N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
 Ni min 99.9%
 Brand: Norilsk Nickel Harjavalta Cathodes

Batch 51191 / Quantity 25.125 KG

Characteristic	Unit	Result	Specification
Co	%	0,0236	
Fe	%	0,0001	
Cu	%	0,0016	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	0,0003	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0012	
S	%	0,0004	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


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Certificate of Analysis

Date
05.05.2015
Delivery item/date
810014375 000020 / 30.04.2015
Order item/date
10012093 000060 / 29.04.2015
Customer number
700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 51091 / Quantity 25.376 KG

Characteristic	Unit	Result	Specification
Co	%	0,0319	
Fe	%	< 0,0001	
Cu	%	0,0005	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	< 0,0001	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0014	
S	%	0,0002	
Bi	%	< 0,0010	
Sn	%	< 0,0004	



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Certificate of Analysis

Date
30.04.2015
Delivery item/date
810014345 000010 / 30.04.2015
Order item/date
10012093 000010 / 29.04.2015
Customer number
700511

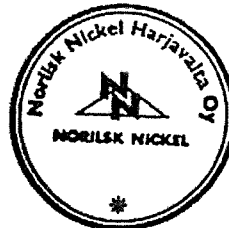
Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 51042 / Quantity 25.495 KG

Characteristic	Unit	Result	Specification
Co	%	0,0299	
Fe	%	< 0,0001	
Cu	%	0,0003	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	< 0,0001	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0013	
S	%	0,0002	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


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Steinweg Hartel Terminal
Beerweg 301
3199 LM ROTTERDAM
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Certificate of Analysis	
Date	04.05.2015
Delivery item/date	810014364 000010 / 30.04.2015
Order item/date	10012093 000020 / 29.04.2015
Customer number	700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 51061 / Quantity 25.107 KG

Characteristic	Unit	Result	Specification
Co	‰	0,0286	
Fe	‰	0,0002	
Cu	‰	0,0003	
Zn	‰	< 0,0001	
Mn	‰	< 0,0001	
Ca	‰	0,0002	
Al	‰	< 0,0001	
Cr	‰	< 0,0001	
Cd	‰	0,0001	
Pb	‰	< 0,0001	
Se	‰	0,0001	
P	‰	< 0,0002	
As	‰	< 0,0001	
Si	‰	< 0,0005	
Sb	‰	< 0,0004	
C	‰	0,0012	
S	‰	0,0004	
Bi	‰	< 0,0010	
Sn	‰	< 0,0004	


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Date
04.05.2015
Delivery item/date
810014364 000030 / 30.04.2015
Order item/date
10012093 000040 / 29.04.2015
Customer number
700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 51071 / Quantity 25.224 KG

Characteristic	Unit	Result	Specification
Co	%	0,0300	
Fe	‰	0,0001	
Cu	‰	0,0008	
Zn	‰	< 0,0001	
Mn	‰	< 0,0001	
Ca	‰	0,0001	
Al	‰	< 0,0001	
Cr	‰	< 0,0001	
Cd	‰	0,0001	
Pb	‰	< 0,0001	
Se	‰	0,0002	
P	‰	< 0,0002	
As	‰	< 0,0001	
Si	‰	< 0,0005	
Sb	‰	< 0,0004	
C	‰	0,0017	
S	‰	0,0006	
Bi	‰	< 0,0010	
Sn	‰	< 0,0004	


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Date
12.05.2015
Delivery item/date
810014391 000010 / 30.04.2015
Order item/date
10012093 000100 / 29.04.2015
Customer number
700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 51182 / Quantity 25.731 KG

Characteristic	Unit	Result	Specification
Co	ppm	0,0281	
Fe	ppm	< 0,0001	
Cu	ppm	0,0011	
Zn	ppm	< 0,0001	
Mn	ppm	< 0,0001	
Ca	ppm	< 0,0001	
Al	ppm	< 0,0001	
Cr	ppm	< 0,0001	
Cd	ppm	0,0001	
Pb	ppm	< 0,0001	
Se	ppm	0,0002	
P	ppm	< 0,0002	
As	ppm	0,0001	
Si	ppm	< 0,0005	
Sb	ppm	< 0,0004	
C	ppm	0,0016	
S	ppm	0,0002	
Bi	ppm	< 0,0010	
Sn	ppm	< 0,0004	


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Steinweg Hartel Terminal
 Beerweg 301
 3199 LM ROTTERDAM
 NETHERLANDS

Certificate of Analysis

Date
 07.05.2015
 Delivery item/date
 810014387 000010 / 30.04.2015
 Order item/date
 10012093 000080 / 29.04.2015
 Customer number
 700511

Material:
 N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
 Ni min 99.9%
 Brand: Norilsk Nickel Harjavalta Cathodes

Batch 51181 / Quantity 25.277 KG

Characteristic	Unit	Result	Specification
Co	%	0,0262	
Fe	%	< 0,0001	
Cu	%	0,0005	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	< 0,0001	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0031	
S	%	0,0004	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


 Juha Parkkinen
 Norilsk Nickel Harjavalta Oy



52556028

Steinweg Warehouse
Pier 1, Port 2175
3087 BA ROTTERDAM
NETHERLANDS

Certificate of Analysis

Date
17.09.2014
Customer number
700500

Material:

N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)

Ni min 99.9%

Batch 42462

Characteristic	Unit	Result	Specification
Co	ppm	0,0260	
Fe	ppm	0,0001	
Cu	ppm	0,0008	
Zn	ppm	< 0,0001	
Mn	ppm	< 0,0001	
Ca	ppm	< 0,0001	
Al	ppm	< 0,0001	
Cr	ppm	< 0,0001	
Cd	ppm	0,0002	
Pb	ppm	0,0002	
Se	ppm	< 0,0001	
P	ppm	< 0,0002	
As	ppm	< 0,0001	
Si	ppm	< 0,0005	
Sb	ppm	< 0,0004	
C	ppm	0,0010	
S	ppm	< 0,0002	
Bi	ppm	< 0,0010	
Sn	ppm	< 0,0004	



Juha Parkkinen
Norilsk Nickel Harjavalta Oy



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Steinweg Hartel Terminal
Beerweg 301
3199 LM ROTTERDAM
NETHERLANDS

Certificate of Analysis

Date
04.05.2015
Delivery item/date
810014364 000020 / 30.04.2015
Order item/date
10012093 000030 / 29.04.2015
Customer number
700511

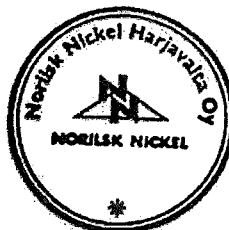
Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 51052 / Quantity 25.575 KG

Characteristic	Unit	Result	Specification
Co	%	0,0384	
Fe	%	< 0,0001	
Cu	%	0,0005	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	0,0004	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0011	
S	%	< 0,0002	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


Juha Parkkinen
Norilsk Nickel Harjavalta Oy



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Steinweg Hartel Terminal
Beerweg 301
3199 LM ROTTERDAM
NETHERLANDS

Certificate of Analysis


Date
06.05.2015
Delivery item/date
810014381 000010 / 30.04.2015
Order item/date
10012093 000070 / 29.04.2015
Customer number
700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 51161 / Quantity 25.385 KG

Characteristic	Unit	Result	Specification
Co	%	0,0296	
Fe	%	< 0,0001	
Cu	%	0,0003	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	< 0,0001	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0010	
S	%	0,0003	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


Juha Parkkinen
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Steinweg Hartel Terminal
Beerweg 301
3199 LM ROTTERDAM
NETHERLANDS

Certificate of Analysis

Date
12.05.2015
Delivery item/date
810014414 000010 / 30.04.2015
Order item/date
10012093 000120 / 29.04.2015
Customer number
700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 51192 / Quantity 25.498 KG

Characteristic	Unit	Result	Specification
Co	%	0,0266	
Fe	%	0,0001	
Cu	%	0,0006	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	< 0,0001	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0013	
S	%	0,0003	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


Juha Parkkinen
Norilsk Nickel Harjavalta Oy



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Steinweg Hartel Terminal
 Beerweg 301
 3199 LM ROTTERDAM
 NETHERLANDS

Certificate of Analysis

Date
 18.05.2015
 Delivery item/date
 810014452 000010 / 30.04.2015
 Order item/date
 10012093 000140 / 29.04.2015
 Customer number
 700511

Material:
 N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
 Ni min 99.9%
 Brand: Norilsk Nickel Harjavalta Cathodes

Batch 51271 / Quantity 25.953 KG

Characteristic	Unit	Result	Specification
Co	%	0,0285	
Fe	%	0,0006	
Cu	‰	0,0006	
Zn	‰	< 0,0001	
Mn	‰	< 0,0001	
Ca	‰	< 0,0001	
Al	‰	< 0,0001	
Cr	‰	< 0,0001	
Cd	‰	0,0001	
Pb	‰	0,0006	
Se	‰	< 0,0001	
P	‰	< 0,0002	
As	‰	< 0,0001	
Si	‰	< 0,0005	
Sb	‰	< 0,0004	
C	‰	0,0010	
S	‰	< 0,0002	
Bi	‰	< 0,0010	
Sn	‰	< 0,0004	


 Juha Parkkinen
 Norilsk Nickel Harjavalta Oy





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Steinweg Hartel Terminal
Beerweg 301
3199 LM ROTTERDAM
NETHERLANDS

Certificate of Analysis

Date
05.05.2015
Delivery item/date
810014375 000010 / 30.04.2015
Order item/date
10012093 000050 / 29.04.2015
Customer number
700511

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2013)
Ni min 99.9%
Brand: Norilsk Nickel Harjavalta Cathodes

Batch 51162 / Quantity 25.290 KG

Characteristic	Unit	Result	Specification
Co	%	0,0287	
Fe	%	0,0001	
Cu	%	0,0003	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	< 0,0001	
Se	%	0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0012	
S	%	0,0003	
Bi	%	< 0,0010	
Sn	%	< 0,0004	

Juha Parkkinen
Norilsk Nickel Harjavalta Oy



53753298 / 0

Metal Trade Overseas AG
Bahnhofstrasse 20
6301 ZUG
SWITZERLAND

Certificate of Analysis

Date
13.02.2013
Customer number
100000

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
Ni min 99.9%
Batch 20901

Characteristic	Unit	Result	Specification
Co	%	0,0312	
Fe	%	0,0002	
Cu	%	0,0016	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	0,0002	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0002	
Pb	%	0,0003	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	0,0003	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0048	
S	%	0,0025	
Bi	%	< 0,0010	
Sn	%	< 0,0004	



Jukka Parkkinen
Norilsk Nickel Harjavalta Oy



53753298/0

Metal Trade Overseas AG
Bahnhofstrasse 20
6301 ZUG
SWITZERLAND

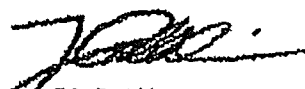
Certificate of Analysis

Date
11.02.2013
Customer number
100000

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
Ni min 99.9%
Batch 21781

Characteristic	Unit	Result	Specification
Co	%	0,0284	
Fe	%	0,0009	
Cu	%	0,0016	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	0,0008	
Se	%	0,0005	
P	%	< 0,0002	
As	%	0,0002	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0026	
S	%	0,0017	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


Jukka Parkkinen
Norilsk Nickel Harjavalta Oy



Norilsk Nickel Harjavalta Oy

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FI-28200 Harjavalta, Finland
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www.norilsk.fi
Company ID: 1591728-4
Domicile: Espoo

53753298 / 0

Metal Trade Overseas AG
Bahnhofstrasse 20
6301 ZUG
SWITZERLAND

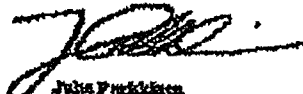
Certificate of Analysis

Date
11.02.2013
Customer number
100000

Material:
N1226 Cathodes B90X970/B1600

Conforms to ASTM B39-79 (2008)
Ni min 99.9%
Batch 21801

Characteristic	Unit	Result	Specification
Co	%	0,0235	
Fe	%	0,0001	
Cu	%	0,0009	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	0,0002	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	0,0010	
Se	%	0,0004	
P	%	< 0,0002	
As	%	0,0002	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0034	
S	%	0,0024	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


Jukka P. Pekkari
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Norsk Nickel Harjavalta Oy

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Tel. +358 (0)2 537 11, Fax +358 (0)2 53712250
firstname.lastname@nornik.fi

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Company ID: 1881728-4
Domicile: Espoo

53753298/0

Metal Trade Overseas AG
Bahnhofstrasse 20
6301 ZUG
SWITZERLAND

Certificate of Analysis

Date
11.02.2013
Customer number
100000

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
Ni min 99.9%
Batch 21871

Characteristic	Unit	Result	Specification
Co	%	0,0208	
Fe	%	0,0001	
Cu	%	0,0011	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	0,0003	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	0,0003	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	0,0007	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0030	
S	%	0,0029	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


Jukka Perkkänen
Norilsk Nickel Harjavalta Oy



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Certificate of Analysis

 Date
 30.01.2013
 Customer number

 Material:
 N1226 Cathodes 890X970/B1600

 Conforms to ASTM B39-79 (2008)
 Ni min 99.9%
 Batch 22781

Characteristic	Unit	Result	Specification
Co	%	0,0232	
Fe	%	0,0003	
Cu	%	0,0003	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	0,0001	
Se	%	0,0002	
P	%	0,0002	
As	%	0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0057	
S	%	< 0,0002	
Bi	%	< 0,0010	
Sn	%	< 0,0004	



Jukka Partanen
 Norilsk Nickel Harjavalta Oy



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53753298/0

Certificate of Analysis

Date
30.01.2013
Customer number

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
Ni min 99.9%
Batch 22851

Characteristic	Unit	Result	Specification
Co	%	0,0276	
Fe	%	< 0,0001	
Cu	%	0,0005	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	0,0002	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	0,0002	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	0,0002	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0042	
S	%	0,0006	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


Jukka Paakkonen
Norilsk Nickel Harjavalta Oy



Norilsk Nickel Harjavalta Oy

Teollisuuskatu 1
FI-29200 Harjavalta, Finland
Tel. +358 (0)2 537 11, Fax +358 (0)2 53712250
firstname.lastname@norilk.fi

www.norilk.fi
Company ID: 1591728-4
Domicile: Espoo

53753298/0

Certificate of AnalysisDate
30.01.2013
Customer numberMaterial:
N1226 Cathodes 890X970/B1600Conforms to ASTM B39-79 (2008)
Ni min 99.9%
Batch 22891

Characteristic	Unit	Result	Specification
Co	g	0,0278	
Fe	g	< 0,0001	
Cu	g	0,0004	
Zn	g	< 0,0001	
Mn	g	< 0,0001	
Ca	g	0,0003	
Al	g	< 0,0001	
Cr	g	< 0,0001	
Cd	g	0,0001	
Pb	g	0,0002	
Se	g	< 0,0001	
P	g	< 0,0002	
As	g	0,0002	
Si	g	< 0,0005	
Sb	g	< 0,0004	
C	g	0,0085	
S	g	< 0,0013	
Bi	g	< 0,0010	
Sn	g	< 0,0004	


Juhani Parkkinen
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FI-29200 Harjavalta, Finland
Tel. +358 (0)2 637 11, Fax +358 (0)2 53712260
firstname.lastname@norlik.fiwww.norlik.fi
Company ID: 1691728-4
Domicile: Espoo



NORILSK NICKEL

NORILSK NICKEL HARJAVALTA Oy

53753298/0

Certificate of Analysis

Date
30.01.2013
Customer number

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
Ni min 99.9%
Batch 22892

Characteristic	Unit	Result	Specification
Co	%	0,0278	
Fe	%	< 0,0001	
Cu	%	0,0007	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	0,0003	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0067	
S	%	0,0008	
Bi	%	< 0,0010	
Sn	%	< 0,0004	

Juha Parkkinen
Norilsk Nickel Harjavalta Oy



53753298/0


Certificate of Analysis

Date
30.01.2013
Customer number

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
Ni min 99.9%
Batch 22911

Characteristic	Unit	Result	Specification
Co	%	0,0316	
Fa	%	< 0,0001	
Cu	%	0,0007	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	0,0003	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0070	
S	%	0,0004	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


Jukka Paakkola
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Tuulikatu 1
FI-20200 Harjavalta, Finland
Tel. +358 (0)2 537 11, Fax +358 (0)2 53712250
firstname.lastname@norilsk.fi

www.norilsk.fi
Company ID: 1591729-4
Domicile: Espoo

1112

53753298/0

Certificate of Analysis

Date
30.01.2013
Customer number

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
Ni min 99.9%
Batch 22921

Characteristic	Unit	Result	Specification
Co	%	0,0350	
Fe	%	< 0,0001	
Cu	%	0,0008	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	0,0002	
Se	%	< 0,0001	
P	%	0,0002	
As	%	0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0055	
S	%	0,0006	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


Jukka Parkkinen
Norilsk Nickel Harjavalta Oy



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Certificate of Analysis
Date
30.01.2013
Customer number

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
Ni min 99.9%
Batch 23055

Characteristic	Unit	Result	Specification
Co	μg	0,0346	
Fe	μg	< 0,0001	
Cu	μg	0,0007	
Zn	μg	< 0,0001	
Mn	μg	< 0,0001	
Ca	μg	< 0,0001	
Al	μg	< 0,0001	
Cr	μg	< 0,0001	
Cd	μg	0,0001	
Pb	μg	0,0001	
Se	μg	< 0,0001	
P	μg	< 0,0002	
As	μg	< 0,0001	
Si	μg	< 0,0005	
Sb	μg	< 0,0004	
C	μg	0,0055	
S	μg	0,0015	
Bi	μg	< 0,0010	
Sn	μg	< 0,0004	


Juhani Parkkinen
Norilsk Nickel Harjavalta Oy



53753298/0

Zuidnatie Terminal Zuid
Narvikstraat - Quay 118
2030 ANTWERP
BELGIUM

Certificate of Analysis

Date
20.06.2013
Delivery item/date
810010551 000060 / 19.06.2013
Order item/date
10009118 000060 / 18.06.2013
Customer number
700403

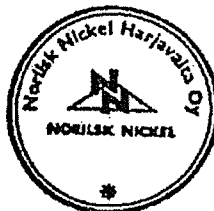
Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
Ni min 99.9%

Batch 31061 / Quantity 25.646 KG

Characteristic	Unit	Result	Specification
Co	‰	0,0300	
Fe	‰	< 0,0001	
Cu	‰	0,0004	
Zn	‰	< 0,0001	
Mn	‰	< 0,0001	
Ca	‰	< 0,0001	
Al	‰	< 0,0001	
Cr	‰	< 0,0001	
Cd	‰	0,0002	
Pb	‰	< 0,0001	
Se	‰	< 0,0001	
P	‰	< 0,0002	
As	‰	< 0,0001	
Si	‰	< 0,0005	
Sb	‰	< 0,0004	
C	‰	0,0043	
S	‰	0,0011	
Bi	‰	< 0,0010	
Sn	‰	< 0,0004	


Jukka Paakkineu
Norilsk Nickel Harjavalta Oy



53753298/0

 Zuidnatie Terminal Zuid
 Narvikstraat - Quay 118
 2030 ANTWERP
 BELGIUM

Certificate of Analysis

 Date
 20.06.2013
 Delivery item/date
 810010551 000010 / 19.06.2013
 Order item/date
 10009118 000010 / 18.06.2013
 Customer number
 700403

 Material:
 N1226 Cathodes 890X970/B1600

 Conforms to ASTM B39-79 (2008)
 Ni min 99.9%

Batch 31171 / Quantity 25.384 KG

Characteristic	Unit	Result	Specification
Co	%	0,0278	
Fe	%	< 0,0001	
Cu	%	0,0003	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	0,0002	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0002	
Pb	%	< 0,0001	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	0,0002	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0018	
S	%	0,0011	
Bi	%	< 0,0010	
Sn	%	< 0,0004	



Juha Parkkinen
 Norilsk Nickel Harjavalta Oy



53753298 / 0

 Zuidnatie Terminal Zuid
 Narvikstraat - Quay 118
 2030 ANTWERP
 BELGIUM

Certificate of Analysis

 Date
 20.06.2013
 Delivery item/date
 810010551 000040 / 19.06.2013
 Order item/date
 10009118 000040 / 18.06.2013
 Customer number
 700403

 Material:
 N1226 Cathodes 890X970/B1600

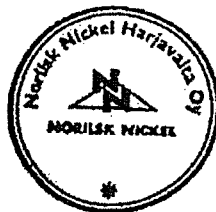
 Conforms to ASTM B39-79 (2008)
 Ni min 99.9%

Batch 31174 / Quantity 25.393 KG

Characteristic	Unit	Result	Specification
Co	%	0,0296	
Fe	%	< 0,0001	
Cu	%	0,0006	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	0,0004	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0002	
Pb	%	0,0004	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	0,0002	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0019	
S	%	0,0008	
Bi	%	< 0,0010	
Sn	%	< 0,0004	



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Certificate of Analysis

 Date
 24.06.2013
 Delivery item/date
 810010576 000040 / 18.06.2013
 Order item/date
 10009118 000100 / 18.06.2013
 Customer number
 700403

 Material:
 N1226 Cathodes 890X970/B1600

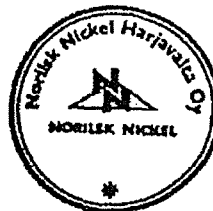
 Conforms to ASTM B39-79 (2008)
 Ni min 99.9%

Batch 31281 / Quantity 25.226 KG

Characteristic	Unit	Result	Specification
Co	%	0,0297	
Fe	%	< 0,0001	
Cu	%	0,0011	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	0,0006	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0002	
Pb	%	< 0,0001	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0022	
S	%	0,0019	
Bi	%	< 0,0010	
Sn	%	< 0,0004	



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Date
09.07.2013
Delivery item/date
810010700 000010 / 08.07.2013
Order item/date
10009217 000020 / 08.07.2013
Customer number
700444

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
Ni min 99.9%

Batch ~~31801~~ / Quantity 23.974 KG

31801

Characteristic	Unit	Result	Specification
Co	%	0,0278	
Fe	%	0,0004	
Cu	%	0,0009	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	0,0003	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0002	
Pb	%	0,0004	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0061	
S	%	0,0017	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


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Date
 13.09.2013
 Delivery item/date
 810011054 000060 / 13.09.2013
 Order item/date
 10009503 000060 / 06.09.2013
 Customer number
 700443

Material:
 N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
 Ni min 99.9%

Batch 32301 / Quantity 24.537 KG

Characteristic	Unit	Result	Specification
Co	%	0,0255	
Fe	%	< 0,0001	
Cu	%	0,0006	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	ppm	0,0002	
Pb	ppm	< 0,0001	
Se	ppm	< 0,0001	
P	ppm	< 0,0002	
As	ppm	< 0,0001	
Si	ppm	< 0,0005	
Sb	ppm	< 0,0004	
C	ppm	0,0091	
S	ppm	0,0019	
Bi	ppm	< 0,0010	
Sn	ppm	< 0,0004	


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 Order item/date
 10009503 000070 / 06.09.2013
 Customer number
 700443

Material:
 N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
 Ni min 99.9%

Batch 32352 / Quantity 23.989 KG

Characteristic	Unit	Result	Specification
Co	%	0,0294	
Fe	%	< 0,0001	
Cu	%	0,0004	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	< 0,0001	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0063	
S	%	0,0014	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


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Date
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 Delivery item/date
 810011054 000110 / 13.09.2013
 Order item/date
 10009503 000110 / 06.09.2013
 Customer number
 700443

Material:
 N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
 Ni min 99.9%

Batch 32361 / Quantity 23.970 KG

Characteristic	Unit	Result	Specification
Co	%	0,0234	
Fe	%	< 0,0001	
Cu	%	0,0004	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	< 0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	< 0,0001	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0067	
S	%	0,0014	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


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Certificate of Analysis	
Date	13.09.2013
Delivery item/date	810011054 000180 / 13.09.2013
Order item/date	10009503 000180 / 06.09.2013
Customer number	700443

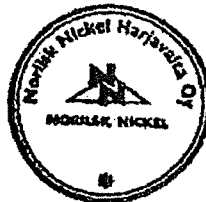
Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
Ni min 99.9%

Batch 32411 / Quantity 23.774 KG

Characteristic	Unit	Result	Specification
Co	g	0,0190	
Fe	g	< 0,0001	
Cu	g	0,0006	
Zn	g	< 0,0001	
Mn	g	< 0,0001	
Ca	g	< 0,0001	
Al	g	< 0,0001	
Cr	g	< 0,0001	
Cd	g	0,0001	
Pb	g	< 0,0001	
Se	g	< 0,0001	
P	g	< 0,0002	
As	g	< 0,0001	
Si	g	< 0,0005	
Sb	g	< 0,0004	
C	g	0,0036	
S	g	0,0016	
Bi	g	< 0,0010	
Sn	g	< 0,0004	


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 Order item/date
 10009503 000010 / 06.09.2013
 Customer number
 700443

Material:
 N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
 Ni min 99.9%

Batch 32431 / Quantity 23.849 KG

Characteristic	Unit	Result	Specification
Co	ppm	0,0207	
Fe	ppm	0,0003	
Cu	ppm	0,0006	
Zn	ppm	< 0,0001	
Mn	ppm	< 0,0001	
Ca	ppm	0,0004	
Al	ppm	< 0,0001	
Cr	ppm	0,0001	
Cd	ppm	0,0001	
Pb	ppm	< 0,0001	
Se	ppm	< 0,0001	
P	ppm	< 0,0002	
As	ppm	< 0,0001	
Si	ppm	< 0,0005	
Sb	ppm	< 0,0004	
C	ppm	0,0080	
S	ppm	0,0021	
Bi	ppm	< 0,0010	
Sn	ppm	< 0,0004	


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 Order item/date
 10009503 000190 / 06.09.2013
 Customer number
 700443

Material:
 N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
 Ni min 99.9%

Batch 32471 / Quantity 23.683 KG

Characteristic	Unit	Result	Specification
Co	μg	0,0222	
Fe	μg	< 0,0001	
Cu	μg	0,0004	
Zn	μg	< 0,0001	
Mn	μg	< 0,0001	
Ca	μg	< 0,0001	
Al	μg	< 0,0001	
Cr	μg	< 0,0001	
Cd	μg	0,0001	
Pb	μg	< 0,0001	
Se	μg	< 0,0001	
P	μg	< 0,0002	
As	μg	< 0,0001	
Si	μg	< 0,0005	
Sb	μg	< 0,0004	
C	μg	0,0067	
S	μg	0,0024	
Bi	μg	< 0,0010	
Sn	μg	< 0,0004	


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10009503 000210 / 06.09.2013
Customer number
700443

Material:
NI226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
Ni min 99.9%

Batch 32491 / Quantity 24.802 KG

Characteristic	Unit	Result	Specification
Co	%	0,0242	
Fe	%	< 0,0001	
Cu	%	0,0008	
Zn	%	< 0,0001	
Mn	%	< 0,0001	
Ca	%	< 0,0001	
Al	%	0,0001	
Cr	%	< 0,0001	
Cd	%	0,0001	
Pb	%	< 0,0001	
Se	%	< 0,0001	
P	%	< 0,0002	
As	%	< 0,0001	
Si	%	< 0,0005	
Sb	%	< 0,0004	
C	%	0,0050	
S	%	0,0019	
Bi	%	< 0,0010	
Sn	%	< 0,0004	


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Date
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Order item/date
10009513 000070 / 10.09.2013
Customer number
700443

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
Ni min 99.9%

Batch 32511 / Quantity 24.249 KG

Characteristic	Unit	Result	Specification
Co	ppm	0,0207	
Fe	ppm	< 0,0001	
Cu	ppm	0,0019	
Zn	ppm	< 0,0001	
Mn	ppm	< 0,0001	
Ca	ppm	< 0,0001	
Al	ppm	0,0001	
Cr	ppm	< 0,0001	
Cd	ppm	0,0001	
Pb	ppm	< 0,0001	
Se	ppm	< 0,0001	
P	ppm	< 0,0002	
As	ppm	0,0002	
Si	ppm	< 0,0005	
Sb	ppm	< 0,0004	
C	ppm	0,0052	
S	ppm	0,0017	
Bi	ppm	< 0,0010	
Sn	ppm	< 0,0004	


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Date
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 Delivery item/date
 810011100 000090 / 20.09.2013
 Order item/date
 10009513 000090 / 10.09.2013
 Customer number
 700443

Material:
 NI226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
 Ni min 99.9%

Batch 32541 / Quantity 23.854 KG

Characteristic	Unit	Result	Specification
Co	ppm	0,0181	
Fe	ppm	< 0,0001	
Cu	ppm	0,0005	
Zn	ppm	< 0,0001	
Mn	ppm	< 0,0001	
Ca	ppm	< 0,0001	
Al	ppm	< 0,0001	
Cr	ppm	< 0,0001	
Cd	ppm	0,0001	
Pb	ppm	0,0003	
Se	ppm	< 0,0001	
P	ppm	< 0,0002	
As	ppm	< 0,0001	
Si	ppm	< 0,0005	
Sb	ppm	< 0,0004	
C	ppm	0,0073	
S	ppm	0,0024	
Bi	ppm	< 0,0010	
Sn	ppm	< 0,0004	


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 Delivery item/date
 810011100 000120 / 20.09.2013
 Order item/date
 10009513 000120 / 10.09.2013
 Customer number
 700443

Material:
 NI226 Cathodes 890X970/B1600

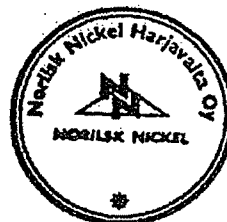
Conforms to ASTM B39-79 (2008)
 Ni min 99.9%

Batch 32561 / Quantity 24.104 KG

Characteristic	Unit	Result	Specification
Co	μg	0,0263	
Fe	μg	0,0001	
Cu	μg	0,0004	
Zn	μg	< 0,0001	
Mn	μg	< 0,0001	
Ca	μg	< 0,0001	
Al	μg	< 0,0001	
Cr	μg	< 0,0001	
Cd	μg	0,0002	
Pb	μg	< 0,0001	
Se	μg	< 0,0001	
P	μg	< 0,0002	
As	μg	< 0,0001	
Si	μg	< 0,0005	
Sb	μg	< 0,0004	
C	μg	0,0077	
S	μg	0,0026	
Bi	μg	< 0,0010	
Sn	μg	< 0,0004	



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Delivery item/date
810011100 000110 / 20.09.2013
Order item/date
10009513 000110 / 10.09.2013
Customer number
700443

Material:
N1226 Cathodes 890X970/B1600

Conforms to ASTM B39-79 (2008)
Ni min 99.9%

Batch 32562 / Quantity 24.268 KG

Characteristic	Unit	Result	Specification
Co	ppm	0,0236	
Fe	ppm	< 0,0001	
Cu	ppm	0,0004	
Zn	ppm	< 0,0001	
Mn	ppm	< 0,0001	
Ca	ppm	< 0,0001	
Al	ppm	0,0001	
Cr	ppm	< 0,0001	
Cd	ppm	0,0002	
Pb	ppm	< 0,0001	
Se	ppm	< 0,0001	
P	ppm	< 0,0002	
As	ppm	< 0,0001	
Si	ppm	< 0,0005	
Sb	ppm	< 0,0004	
C	ppm	0,0092	
S	ppm	0,0023	
Bi	ppm	< 0,0010	
Sn	ppm	< 0,0004	



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