**Lampiran 1 Sertifikat Aluminium 6061**

M : FAX NO. : Oct. 30 2012 09:58AM P1

KUM-04

**INSPECTION CERTIFICATE № 11.9585**

**EN 10204 - 3.1**

Consigner:

Consignee:

Quantity: 29

Net Weight, kg.: 1422

Contract number: V1263 S
PO-KL M-01/170111 part 1

Article number: -

Specification №: V1263

Lot №: 1

Package №: 715210

Description of Goods: Sheet

| Grade of Product | Dimensions, inch/mm |
|---|---|
| - | 6.000X1219.2X2438.4 |

Requirements on the Products:

Material conforms to quality of alloy: 6061 T651

Product conforms to all requirements of:
ASTMB209-07 This product conforms to European Union RoHS Directive 2002/95/EC

Mechanical Properties

| The Condition of Tested Standards | Lot Number | Cast Number | Number of Tests | Tensile Strength ksi min | Tensile Strength ksi max | Yield Strength (0.2% offset) ksi min | Yield Strength (0.2% offset) ksi max | Elongation, % min | Elongation, % max | Hardness, HB |
|---|---|---|---|---|---|---|---|---|---|---|
| Required | | | | - | - | - | - | - | - | - |
| - | 670190 | 13-6158 | 5 | 48.2 | 48.7 | 41.0 | 42.5 | 12.0 | 14.0 | - |

Chemical Composition, %

| Element | Silicon Si | Iron Fe | Copper Cu | Manganese Mn | Magnesium Mg | Chromium Cr | Nickel Ni | Zinc Zn | Titanium Ti | Zirconium Zr |
|---|---|---|---|---|---|---|---|---|---|---|
| Required | 0.4-0.8 | 0.7 | 0.15-0.40 | 0.15 | 0.8-1.2 | 0.04-0.35 | - | 0.25 | 0.15 | - |
| Contents | 0.66 | 0.22 | 0.21 | 0.08 | 1.01 | 0.05 | - | 0.06 | 0.08 | - |

| Element | Ti+Zr | Fe | Tin Sn | Bismuth Bi | Plumbum Pb | Mn+Cr | Ga | Other Elements Each | Other Elements Total | Al |
|---|---|---|---|---|---|---|---|---|---|---|
| Required | - | - | - | - | - | - | - | 0.05 | 0.15 | remainder |
| Contents | - | - | - | - | - | - | - | 0.05 | 0.15 | remainder |

Other Tests

| Method | Macro-structure | Micro-structure | USI | Electro-conductivity | SCF | Contents H2 of metals cm3/100gr |
|---|---|---|---|---|---|---|
| Result | - | - | - | - | - | - |

**Lampiran 2 Hasil Uji SRF Titanium Alloy**

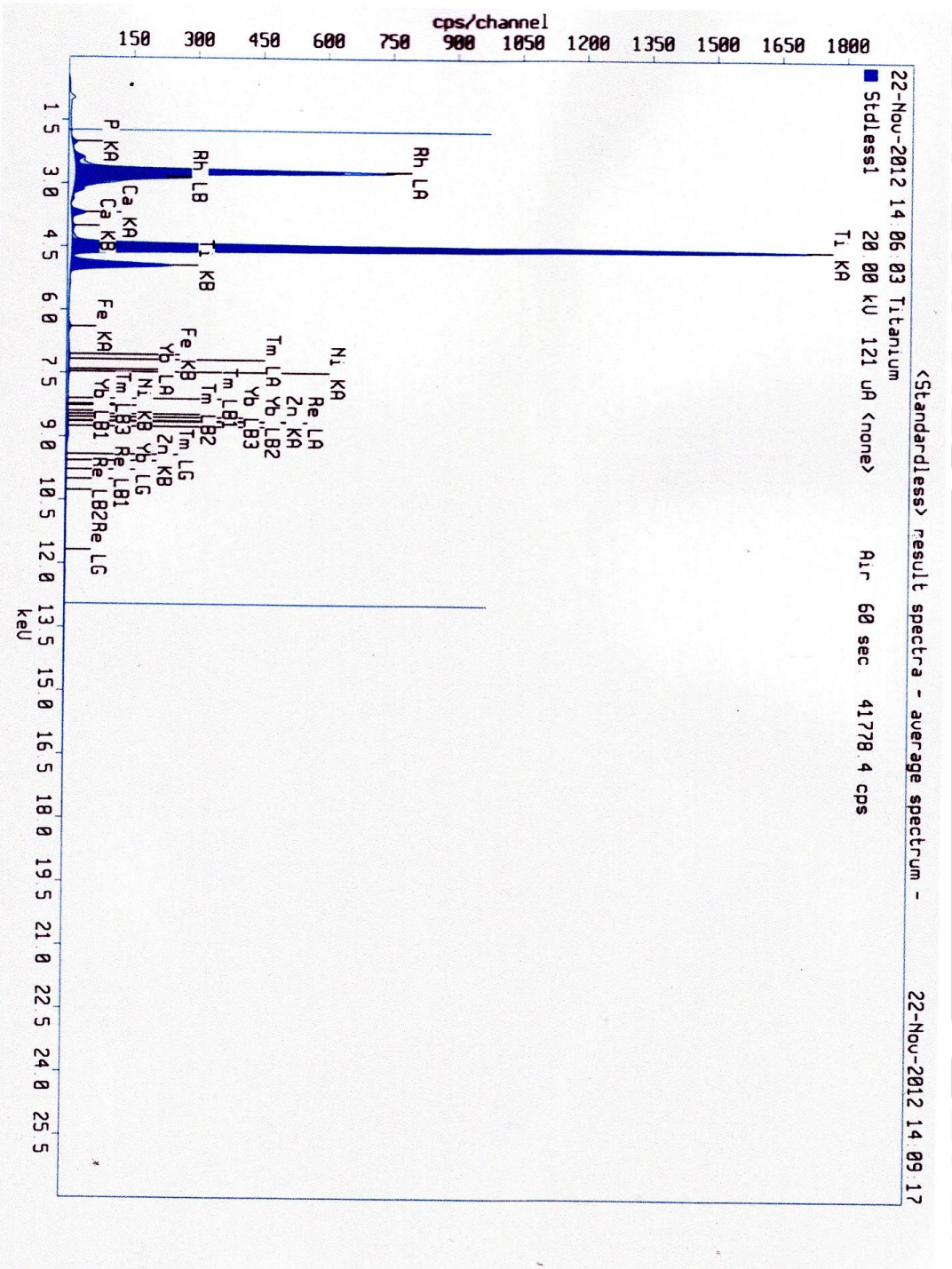
22-Nov-2012 14:09:15 **Sample results - Averages** Page 1

| Sample ident |
|---|
| Titanium |

| | |
|---|---|
| Application | <Standardless> |
| Sequence | Average of 3 |
| Measurement period - start | 22-Nov-2012 13:53:14 |
| Measurement period - end | 22-Nov-2012 14:06:03 |
| Position | 1 |

| Compound | P | Ca | Ti | Fe | Ni | Zn | Tm |
|---|---|---|---|---|---|---|---|
| Conc | 2.6 +/- 0.8 | 2.43 +/- 0.84 | 92.2 +/- 2.4 | 0.54 +/- 0.12 | 0.29 +/- 0.09 | 0.14 +/- 0.05 | 0.90 +/- 0.25 |
| Unit | % | % | % | % | % | % | % |

| Compound | Yb | Re |
|---|---|---|
| Conc | 0.9 +/- 0.6 | 0.3 +/- 0.04 |
| Unit | % | % |


cps/channel
150 300 450 600 750 900 1050 1200 1350 1500 1650 1800
22-Nov-2012 14:06:03 Titanium
Stdless1 20.00 kV 121 uA <none> Air 60 sec 41778.4 cps
<Standardless> result spectra - average spectrum - 22-Nov-2012 14:09:17
keV
1.5 3.0 4.5 6.0 7.5 9.0 10.5 12.0 13.5 15.0 16.5 18.0 19.5 21.0 22.5 24.0 25.5
P KA
Rh LB
Rh LA
Ca KA
Ca KB
Ti KB
Ti KA
Fe KA
Fe KB
Yb LA
Tm LA
Yb LB2
Yb LB3
Ni KA
Re LA
Zn KA
Tm LB1
Tm LB2
Ni KB
Yb LB3
Yb LB1
Zn KB
Tm LG
Yb LG
Re LB1
Re LB2
Re LG