

**TEST REPORT****NUMBER:** 185921**APPLICANT:** Rudholm UK Ltd  
22 Castle Road  
Kings Norton Business Centre  
Kings Norton  
B30 3HZ**DATE:** 4<sup>th</sup> January 2006For the attention of Ken Roberts**SAMPLE DESCRIPTION:** Various Buttons, Rivets and Button Caps**SAMPLES RECEIVED:** 7<sup>th</sup> October / 6<sup>th</sup> December 2005**YOUR REFERENCE:** N/A**REQUEST:** Nickel release on coated items - EN12472 & EN1811**TESTS CONDUCTED  
AND RESULTS:** See attachment**CONCLUSION:** **PASS**

Tests marked (\*) in this Test Report are not included in the UKAS Accreditation Schedule for this Laboratory  
Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation  
Tests marked (^) in this Test Report have been sub-contracted to an agent approved by ITS

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### NICKEL RELEASE TESTING ON COATED/PLATED ITEMS

#### METHOD

The samples were treated following the methods specified in EN12472 and EN1811. The determination of nickel present was by ICP.

#### RESULTS

##### *TESTING WITHOUT WEAR AND CORROSION*

SAMPLE	SAMPLE AREA (cm <sup>2</sup> )	VOLUME OF TEST SOLUTION (mL)	ADJUSTED NICKEL RELEASE (µg/cm <sup>2</sup> /week)	RESULT
Dull Pewter	3.9	4	<0.1	Pass
Gunmetal	5.4	6	<0.1	Pass
Antique Brass	3.9	4	<0.1	Pass
Red Copper	5.4	6	<0.1	Pass
White Zinc	1.8	4	<0.1	Pass
Lead	9.2	15	<0.1	Pass
Red Copper White	5.4	6	<0.1	Pass
Dull Nickel	5.4	6	<0.1	Pass
Shiny Copper	2.1	3	<0.1	Pass
Black Tin	1.6	2	<0.1	Pass
Rusted Copper	2.1	3	<0.1	Pass
Polished Gunmetal	2.2	3	<0.1	Pass
Yellow Tin	1.7	2	<0.1	Pass
Imitation Nickel	2.7	3	<0.1	Pass
Antique Copper	1.4	4	<0.1	Pass
Red Alloy	3.5	4	<0.1	Pass
Imitation Anti Silver	3.5	4	<0.1	Pass
Imitation Anti Silver with Oil Tumbling	3.5	4	<0.1	Pass
Red Anti Brass	3.5	4	<0.1	Pass
Colourful Brass	3.5	4	<0.1	Pass

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Tin Brass	3.5	4	<0.1	Pass
Imitation Brass Nickel	3.5	4	<0.1	Pass
Dyed Black Tin	3.5	4	<0.1	Pass
Black Colourful Brass	3.5	4	<0.1	Pass
Base Alloy	3.5	4	<0.1	Pass
Brushed Imitation Gunmetal	4.2	5	<0.1	Pass
Black Alloy	4.2	5	<0.1	Pass
Brushed Dark Anti Copper	3.5	4	<0.1	Pass
Light Red Copper	3.5	4	<0.1	Pass
Imitation Dull Pewter	3.5	4	<0.1	Pass
Brushed Anti Brass	3.5	4	<0.1	Pass
Sprayed Imitation Pewter	5.3	6	<0.1	Pass
Steel Oxided	10.1	11	<0.1	Pass
Black Red Copper	7.8	8	<0.1	Pass
Oxided Red Copper	7.8	8	<0.1	Pass
Electrophoresis Black	11.3	12	<0.1	Pass
Black Anti Brass	7.0	7	<0.1	Pass
Orange Red Copper (Larger)	8.9	9	<0.1	Pass
Orange Red Copper (Smaller)	4.8	5	<0.1	Pass
Tin Red Copper	7.0	8	<0.1	Pass
Sprayed Brilliant Colour	6.6	7	<0.1	Pass

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### TESTING WITH WEAR AND CORROSION

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Black Tin	1.6	2	<0.1	Pass
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Yellow Tin	1.7	2	<0.1	Pass
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Antique Copper	1.4	4	<0.1	Pass
Red Alloy	3.5	4	<0.1	Pass
Imitation Anti Silver	3.5	4	<0.1	Pass
Imitation Anti Silver with Oil Tumbling	3.5	4	<0.1	Pass
Red Anti Brass	3.5	4	<0.1	Pass
Colourful Brass	3.5	4	<0.1	Pass
Tin Brass	3.5	4	<0.1	Pass
Imitation Brass Nickel	3.5	4	<0.1	Pass
Dyed Black Tin	3.5	4	<0.1	Pass
Black Colourful Brass	3.5	4	<0.1	Pass
Base Alloy	3.5	4	<0.1	Pass
Brushed Imitation Gunmetal	4.2	5	<0.1	Pass
Black Alloy	4.2	5	<0.1	Pass
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Imitation Dull Pewter	3.5	4	<0.1	Pass
Brushed Anti Brass	3.5	4	<0.1	Pass
Sprayed Imitation Pewter	5.3	6	<0.1	Pass
Steel Oxided	10.1	11	<0.1	Pass
Black Red Copper	7.8	8	<0.1	Pass
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Nickel release results given as  $\mu\text{g}/\text{cm}^2/\text{week}$  (limit =  $0.5 \mu\text{g}/\text{cm}^2/\text{week}$  as specified in the European Nickel Directive)

**Date of testing:** 18<sup>th</sup> October / 16<sup>th</sup> December 2005

## END OF REPORT