



**CSIRO**

**TEST  
REPORT**  
XC3391

**Testing  
of  
Clear Automotive Coating**

**CSIRO Infrastructure Technology**

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**Date of Report:** 8 March 2017

## 1.0 INTRODUCTION

At the request of Joel Blake, Zen Automotive Supplier, clear coated card were tested for Scratch and Chemical Resistance.

The sample supplied consisted of 3 190 x 290 mm cards coated with Opti-Coat Pro3; D5 101116AS by Zen Automotive Suppliers.

## 2.0 TEST METHODS

### 2.1 Scratch Resistance

The scratch resistance was determined in accordance with AS 1580 Method 403.1 'Scratch resistance'. A tungsten carbide needle is slid over the surface. The load required for the needle to penetrate through to the substrate is used to indicate the scratch resistance. A maximum of 2000 gm load is used.

### 2.2 Test Conditions and Timing

Ambient conditions at the time of the test/s were  $23 \pm 3^{\circ}\text{C}$  and  $45 \pm 15\%$  RH thereby complying with AS/NZS 1580.101.5

The testing was undertaken on the 22 February 2017 and the results relate to the sample as received.

### 2.3 Chemical Resistance

The chemical resistance of the coating was determined in accordance with ASTM D1308-02 'Effect of Household Chemicals on Clear and Pigmented Organic Finishes'

Concentrated Hydrochloric acid (32%), Phosphoric acid (85%), and Ethanol were applied to the surface of the coating, covered and allowed to be in contact with the surface for one hour. The surface was then washed with distilled water, allowed to dry and then inspected.

## 3.0 RESULTS

The results are detailed below.

**Table 1: Scratch and Chemical Resistance Results**

<b>CSIRO Sample No</b>	<b>XC3391</b>
<b>Sample Details</b>	Opti-Coat Pro 3 D5 101116AS
<b>Scratch Resistance</b> <i>AS 1580 Method 403.1</i>	>2000 g
<b>Chemical Resistance</b> <i>ASTM D1308-02</i>	Conc. Hydrochloric Acid; No effect Conc. Phosphoric Acid: No effect Ethanol: No effect

## 4.0 CONCLUSION

The testing indicates:

1. Opti-Coat Pro3 (D5101116AS) Automotive Coating has an impact resistance of greater than 2000 g and a resistance to concentrated Hydrochloric acid, Phosphoric acid and Ethanol.



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8 March 2017