



## Comparison of Evaporation Rates of Multi-Purpose Maintenance Sprays

### Introduction

Comparison of the evaporation rates of the two XCP™ Professional maintenance sprays, XCP™ ONE and XCP™ Green ONE, and their most widely-available competitors, WD40 and GT85, was required.

### Procedure

Four steel test plates were prepared. These are circular, approximately 75mm in diameter with a raised edge to ensure that the surface area of liquid exposed to the atmosphere is constant in each case.

The test plates were initially cleaned with isopropanol and acetone and then dried thoroughly. Representative samples of each product were obtained as follows:

Spray  $10 \pm 0.5$  g of liquid from an aerosol can of each product into a 300ml capacity HDPE cup. Do not use straw or lance to extract sample.

Allow to stand uncovered at ambient temperature ( $25 \pm 1$  °C) for 30 minutes, ensuring samples are subjected to identical environmental conditions i.e. no adjacent heat source, variation in light conditions or significant localised air movement. This storage time is to allow the majority of the propellant entrained in the liquids to dissipate.

A recorded weight (approximately 2g) – enough to cover the test plate surface - of each liquid were then pipetted onto individual plates. The test plates were held at the same atmospheric conditions as described above for a 24 hour period and the weight loss due to liquid evaporation recorded at periodic intervals over the test time.

## Results

The table below shows the evaporation progression expressed as cumulative weight loss percentage of the four liquids over the 24 hours test period.

<b>Product</b>	<b>XCP™ ONE</b>		<b>XCP™ Green ONE</b>	
		Weight Loss (%)		Weight Loss (%)
Initial Weight (g)	1.918	-	1.924	-
1 Hour	1.901	0.89	1.898	1.35
4 Hours	1.888	1.56	1.898	1.35
24 Hours	1.819	5.16	1.898	1.35

<b>Product</b>	<b>WD40</b>		<b>GT 85</b>	
		Weight Loss (%)		Weight Loss (%)
Initial Weight (g)	1.923	-	1.877	-
1 Hour	1.769	8.01	1.703	9.27
4 Hours	1.462	23.97	1.377	26.64
24 Hours	0.755	60.74	0.644	65.69

## Conclusion

As can be seen from the results shown, WD40 and GT85 exhibit markedly higher weight loss due to evaporation over the 24 hour test period.

The weight loss seen in the first hour of testing in the XCP™ Green ONE is thought to be additional dissipation of propellant further to the 30 minute rest period allowed prior to the commencement of testing.

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