SHARP & HOWELLS
CHEMICAL ANALYSIS & MATERIAL TESTING LABORATORY

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NATA Accreditation No.: 61

TEST REPORT NO.: 25 – 0315

Report Date:	30th May 2025
Client:	**Ecochem Australia Pty Ltd**
Address:	110 South Mountain Road, Upper Plenty, VIC, 3758
Attention:	Geoff Literski
By Email:	geoff@ecochem.com.au
Sample(s):	1 of Rubber
Delivered By:	Ecochem
Lab Number(s):	25/A/2401
Date Received:	28th May 2025
Project:	*Corrosion Testing of Rubber in test item*

Notes:

This laboratory was not involved with, consulted, or requested to undertake sampling of the specimens provided, and testing of those test specimens has been conducted as received in the laboratory.

Accordingly, no responsibility is taken for the integrity, authenticity, appropriateness, or representativeness, of any of the test specimens provided and this must be taken into account when reviewing, comparing or checking the test results published in this report.

Unless otherwise notified, all samples will be disposed of in three months from reporting date.

Yours faithfully,

Sharp and Howells Pty. Ltd.

Michael Wright
D.App.Sc. (App. Chem.), FRACI, C.Chem
Technical Consultant/Senior Scientist

1. INTRODUCTION:

We were provided with a test item composed of steel and rubber and we were requested to test the corrosion potential of the rubber contained in the item using ESO Ultra.

The test item was assigned a laboratory number: 25/A/2401, for identification throughout the laboratory.

Sample Images (As Received):

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2. METHODOLOGY:

Five portions of rubber (approx. 2cm X 2 cm each) were removed from the test item, weighed, and put into five separate containers.
A solution of ESO Ultra was prepared by dilution 1:5 with water.
50 ml of this diluted ESO Ultra solution was then added to each of the five vessels containing the rubber portions.
The vesses were then allowed to stand in an oven at 50 ^{0}C for 10minutes, 20 minutes, 30 minutes, 60 minutes and 24 hours.
At the end of the allotted time, each vessel was removed from the oven, and the rubber was removed from the solution, washed and dried. It was then weighed and was examined for any corrosion.

A "*Shore Durometer*" (a device used to determine the softness/hardness of rubber) was used to test each sample to assess whether any softening or hardening of the rubber had occurred after exposure to the ESO Ultra solution.

3. RESULTS OF ANALYSIS:

Sample	Weight Loss	Visual signs of corrosion or degradation	Shore Durometer Reading
Rubber as received	-	No Visual Degradation or Corrosion	63
Rubber after addition of ESO Ultra (1:5) solution and exposure at 50 ^{0}C for **10 minutes**	Nil	No Visual Degradation or Corrosion	64
Rubber after addition of ESO Ultra (1:5) solution and exposure at 50 ^{0}C for **20 minutes**	Nil	No Visual Degradation or Corrosion	64
Rubber after addition of ESO Ultra (1:5) solution and exposure at 50 ^{0}C for **30 minutes**	Nil	No Visual Degradation or Corrosion	63
Rubber after addition of ESO Ultra (1:5) solution and exposure at 50 ^{0}C for **60 minutes**	Nil	No Visual Degradation or Corrosion	63
Rubber after addition of ESO Ultra (1:5) solution and exposure at 50 ^{0}C for **24 hours**	Nil	No Visual Degradation or Corrosion	63

4. CONCLUSION:

After exposure of the rubber to ESO Ultra (1:5) solution at 50 ^{0}C for various times over 24 hours, there was no visual degradation or corrosion of the rubber, there was no weight loss of the rubber, and there was no change in the hardness/softness of the rubber, as measured with a Shore Durometer.

It is therefor determined that ESO Ultra (1:5) solution does not corrode or degrade the rubber.