TOC and ICP Tests of Urylon

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University of British Columbia

SNO-STR-92-073

September 30, 1992

The Samples

One sheet of white, rigid, 1/4" thick, HH453 85% RH Urylon.
One sheet of thin, floppy, grey, 201-15 FR Urylon.

The Tests

Samples were placed individually in 250ml polypropylene bottles full of DI water, and placed in an oven at about 50C. The samples were periodically checked for water conductivity, and then the water was sent to CanTest for TOC and ICP assay.

Results

White:

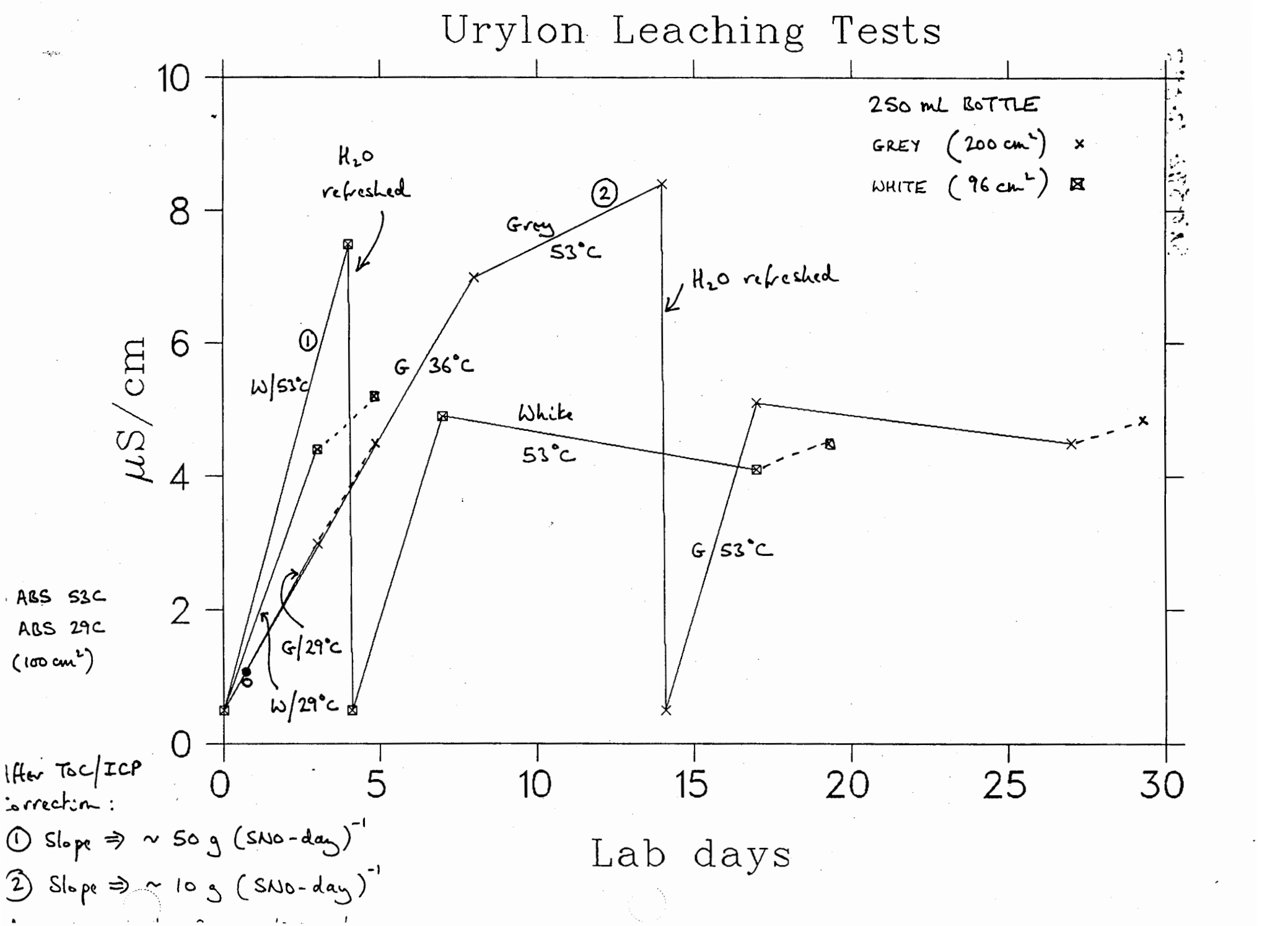
After 90 SNO-days (Sd): TOC 41.1 mg/l, IPC "metals" 29.0 mg/l (mostly PO_4 plus some K and SiO_2).

Grey:

After 170 SNO-days (Sd): TOC 22.6 mg/l, IPC "metals" 4.9 mg/l (mostly PO_4 plus some SiO_2 and a little K).

Conclusions

The total dissolved solids from conductivity work appears to be low by a factor of 25 for the white urylon and 10 for the grey. This would boost my earlier (conservative) estimate of leaching from the liner (2.5 g/Sd total for the white and a factor 2 less for the grey) to about 60 g/Sd for the white and 10 g/Sd for the grey.



ABS 53C
ABS 29C
(100 cm²)

After TOC/ICP correction:

① Slope ⇒ ~ 50 g (SNO-day)$^{-1}$

② Slope ⇒ ~ 10 g (SNO-day)$^{-1}$

Analysis Report

CANTEST

CanTest Ltd

Professional
Analytical
Services

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Fax: 604 731 2386

Tel: 604 734 7276

REPORT ON: Results of Testing

REPORTED TO: University of British Columbia
Department of Physics
6224 Agricultural Road
Vancouver, B.C.
V6T 1Z1

Att'n: Mr. Chris Waltham

PO NUMBER: Q154377

NUMBER OF SAMPLES: 2

REPORT DATE: September 25, 1992

DATE SUBMITTED: September 16, 1992

GROUP NUMBER: 2091602

SAMPLE TYPE: Water

TEST METHODS:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 17th Edition, 1989 and 16th Edition, 1985, published by the American Public Health Association.

Metals: Analysis by Inductively Coupled Plasma Spectroscopy (ICP).

TEST RESULTS:

(See following page)

CAN TEST LTD.

Amy Orr
Coordinator, Water Lab

CANTEST

REPORTED TO: University of British Columbia

REPORT DATE: September 25, 1992

GROUP NUMBER: 2091602

TEST RESULTS:

CLIENT SAMPLE IDENTIFICATION		A - From Uryion Container	B - From Uryion Container		
DATE SAMPLED		Sep 15/92	Sep 15/92	DETECTION LIMIT	UNITS
CAN TEST ID		209160002	209160003		
Total Organic Carbon	C	41.1	22.6	1	mg/L
Total Metals					
Aluminum	Al	<	<	0.15	mg/L
Antimony	Sb	<	<	0.15	mg/L
Arsenic	As	<	<	0.3	mg/L
Barium	Ba	0.001	0.003	0.001	mg/L
Beryllium	Be	<	<	0.003	mg/L
Bismuth	Bi	<	<	0.5	mg/L
Boron	B	0.015	0.014	0.01	mg/L
Cadmium	Cd	<	<	0.025	mg/L
Calcium	Ca	0.015	0.095	0.01	mg/L
Chromium	Cr	<	<	0.03	mg/L
Cobalt	Co	<	<	0.02	mg/L
Copper	Cu	<	<	0.015	mg/L
Iron	Fe	<	<	0.03	mg/L
Lead	Pb	<	<	0.08	mg/L
Magnesium	Mg	0.025	0.013	0.01	mg/L
Manganese	Mn	<	<	0.003	mg/L
Molybdenum	Mo	<	<	0.04	mg/L
Nickel	Ni	<	<	0.025	mg/L
Phosphorus	PO_4	26.5	3.32	0.4	mg/L
Potassium	K	0.80	0.30	0.01	mg/L
Silicon	SiO_2	0.74	0.95	0.08	mg/L
Silver	Ag	<	<	0.03	mg/L
Sodium	Na	0.87	0.11	0.1	mg/L
Strontium	Sr	<	0.001	0.001	mg/L
Tin	Sn	0.037	0.070	0.03	mg/L
Titanium	Ti	<	<	0.006	mg/L
Vanadium	V	<	<	0.01	mg/L
Zinc	Zn	0.025	0.049	0.015	mg/L

mg/L = milligrams per liter
< = Less than detection limit

29.028 4.925

Mult PO_4 PO_4.