

COMMONWEALTH LABORATORY

INCORPORATED

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059

Bobbie Pettit
Hi-Lite Solutions Inc
1285 Brucetown Road
Clear Brook VA. 22624

Reference: Biodegradability Test

Dear Mrs. Pettit:

Enclosed are certificates of analysis, in the format of USEPA 796.3200, for samples submitted by you. These tests were begun and completed in July.

As submitted they pass the test for biodegradability - the test results show it to be "readily biodegradable." The standard is that within 10 days of biodegradation exceeding 10 per cent (of the COD) the test chemical shall exhibit a BOD of 60 per cent of the COD.

The problem with testing concentrated materials is the high variability of COD tests and BOD. A plot of BOD values for Sample 2059-1, for example, shows that the 286,000 mg/l fits the curve - the average and other values are too low. Duplicate values are difficult to obtain at the dilutions required.

Thank you for this opportunity to serve

With kind regards,

Sincerely

Enclosure

Edwin Cox III
President

ECrrrrjagc

CERTIFICATE OF ANALYSIS

CLOSED BOTTLE TEST RESULTS

| | |
|--------------------------------|--|
| Exp. No. | 94-2059-1 |
| Date of Start of Test | July 10, 2010 |
| End of Test | July 28, 2010 (Day 15) |
| Test Material | Aero-Green 4035 Runway Rubber |
| Theoretical Test Concentration | 100% as received |
| Test Method: | USEPA, 796.3200 |
| Inoculum | Per paragraph (b) (2) (i) (A) (2) (i) |
| Analysis (YSI 02 Meter) COD | 8.8 mg/l |
| of Test Material Temperature | 415,556 mg/l |
| of Dilution Water | |
| after Aeration | 20°C |

PART I: O₂ Determinations

| Culture Medium | Analyses | mg O ₂ / l after x days | | |
|---------------------------|----------|------------------------------------|-----------|-----------|
| | | 4. | <u>10</u> | <u>15</u> |
| Mineral nutrient w/o | C1 | 8.8 | 8.7 | 8.6 |
| test material or inoculum | C2 | 8.8 | 8.7 | 8.6 |
| . . . | | 8.8' | 8.7 | 8.6 |

$$M_o = \text{Mean} = (C1 + C2)/2$$

Calculated inoculum or seed corrections (mg/l BOD) by test day:

| | | | | | | |
|-------------------------------|----|------------------------------|-----|-----|-----|------|
| Mineral nutrient w/o | C3 | .45 | .59 | .80 | .92 | |
| Test material but w/ inoculum | C4 | .42 | .55 | 1.0 | 1.2 | |
| | C5 | | .44 | .78 | .99 | |
| | | Mb = Mean = (C3 ÷ C4 ÷ C5)/3 | .44 | .53 | .86 | 1.04 |

Mineral nutrient w/
test material w/ inoculum

| <u>Concentration</u> (ml/300 ml bottle) | | mg | O ₂ /l | |
|--|-------|-----|-------------------|-----|
| | .003 | | | |
| | .003 | 7.0 | 5.5 | 4.9 |
| | | 7.0 | 5.5 | 5.0 |
| | .005 | | | |
| | .005 | 6.3 | 3.7 | 3.3 |
| | . | 6.4 | 3.9 | 3.6 |
| | 0.01 | 3.8 | 1.7 | |
| | 0 | | | |
| | 0.01 | 3.3 | 1.1 | |
| | 0 | 1.4 | | |
| | 0.020 | 5.9 | 1.1 | |
| | 0.020 | 5.9 | | |
| | 0.050 | 4.9 | | |
| | 0.050 | 3.2 | | |

94-2059-1(Aero-Green 4035 Runway Rubber Remover)

PART II: Mineral nutrient w/ test material and w/ inoculum,
Dilution specified, BOD = (mo-mti.) - (mo-mta:) [mg/l)

| | | | |
|------|-------|--------|---------------|
| .003 | | 244000 | 286000 |
| .003 | | 244000 | 276000 |
| .005 | | 118200 | 254400 267600 |
| .005 | | 112200 | 242400 249600 |
| .010 | | 134100 | over depleted |
| .010 | | 149100 | over depleted |
| .020 | 36900 | | over depleted |
| .020 | 36900 | | over depleted |
| .050 | 20760 | | over depleted |
| .050 | 30960 | | over depleted |

Average BOD

31380 128400 246200 269800

PART III: Evaluation

_Per Cent Biodegradability = 100 x (BOD/COD)

after x days

| | | | |
|-----|------|------|------|
| 4 | 8 | 10 | 15 |
| 7.6 | 30.9 | 59.2 | 64.9 |

Or,

Test Solution demonstrated >60% biodegradability within 10 days of reaching 10% BOD/COD. 10% BOD was reached on Day 5.


Respectfully,

August 9,
2010

Edwin Cox III

President