

SmartGlow PS Hazardous Waste Test Results

LABORATORY REPORT

Date: March 21, 2016
Client: Benchmark Scientific Inc.
2600 Main St., Unit A
Sayreville, NJ 08872
Attn: Michael Rosenblum



"dedicated to providing quality aquatic toxicity testing"

4350 Transport Street, Unit 107
Ventura, CA 93003
(805) 650-0546 FAX (805) 650-0756
CA ELAP Cert. No.: 1775

Laboratory No.: A-16031503-001
Sample ID.: SGPS1

Sample Control: The sample was received by ATL in a chilled state, with the chain of custody record attached.

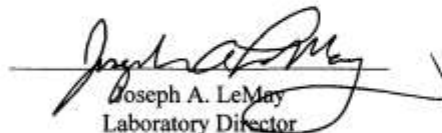
Date Sampled: 03/10/16
Date Received: 03/15/16
Date Tested: 03/16/16 to 03/20/16

Sample Analysis: The following analyses were performed on your sample:
CCR Title 22 - Fathead Minnow Hazardous Waste Screen Bioassay (Polisini and Miller 1988).
Attached are the test data generated from the analysis of your sample. All testing was conducted under the direct supervision of Joseph A. LeMay.

Result Summary:

<u>Sample ID.</u>	<u>Results</u>
SGPS1	PASS (LC50 > 750 mg/l)

Quality Control: Reviewed and approved by:



Joseph A. LeMay
Laboratory Director

**FATHEAD MINNOW HAZARDOUS WASTE
SCREEN BIOASSAY**



Lab No.: A1603503-001

Client/ID: Benchmark Sci. SKPS1

TEST SUMMARY

Species: *Pimephales promelas*.
 Fish weight (gm): av: 0.50; min: 0.45; max: 0.56.
 Reference Toxicant: SDS conducted per batch.
 Test chamber volume: 10 liters.
 Temperature: 20 +/- 2°C.
 Aeration: none, unless D.O. drops below 5.0 mg/l.
 Number of replicates: 2.
 Dilution water: Soft reconstituted water (40-48 mg/l CaCO₃).

Source: Thomas Fish.
 Regulations: CCR Title 22.
 Test Protocol: California F&G/DHS 1988.
 Endpoints: Survival at 96 hrs.
 Test type: Static.
 Feeding: None.
 Number of fish per chamber: 10.
 Photoperiod: 16/8 hrs light/dark.

TEST DATA

	INITIAL			24 Hr				48 Hr				72 Hr				96 Hr			
Date/Time:	3-16-16 1030			3-17-16 1030				3-18-16 1030				3-19-16 1030				3-20-16 1030			
Analyst:	P			P				P				P				P			
	°C	DO	pH	°C	DO	pH	# D	°C	DO	pH	# D	°C	DO	pH	# D	°C	DO	pH	# D
Control A	20.3	8.6	8.1	20.4	8.5	7.5	0	20.8	8.6	7.6	0	20.6	8.7	8.0	0	20.5	8.4	8.1	0
Control B	20.5	8.6	8.1	20.5	8.4	7.5	0	20.7	8.5	7.7	0	20.7	8.5	8.0	0	20.5	8.6	8.6	0
400 mg/l A	20.5	8.4	8.0	20.4	8.5	7.5	0	20.5	7.9	7.7	0	20.6	8.1	7.8	0	20.2	8.0	7.9	0
400 mg/l B	20.4	8.5	8.1	20.5	8.4	7.5	0	20.4	8.0	7.7	0	20.6	8.0	7.8	0	20.2	8.1	7.8	0
750 mg/l A	20.5	8.5	8.1	20.4	8.4	7.5	0	20.5	8.1	7.7	0	20.5	8.1	7.8	0	20.3	8.2	7.8	0
750 mg/l B	20.5	8.4	8.0	20.5	8.4	7.5	0	20.4	8.4	7.7	0	20.4	8.0	7.9	0	20.2	8.4	7.9	0
Comments:	Extraction method: Mechanical shaking <input checked="" type="checkbox"/> None (aqueous solution) <input checked="" type="checkbox"/> NA Dissolved Oxygen (DO) readings in mg/l O ₂ . Test Aerated: <input checked="" type="checkbox"/> / No																		

	CONTROL		HIGH CONCENTRATION		Total Number Dead	
	Alkalinity	Hardness	Alkalinity	Hardness	Control	750 mg/l
Initial	31 mg/l CaCO ₃	44 mg/l CaCO ₃	32 mg/l CaCO ₃	45 mg/l CaCO ₃	0	0 / 20
Final	32 mg/l CaCO ₃	47 mg/l CaCO ₃	33 mg/l CaCO ₃	51 mg/l CaCO ₃	0	0 / 20

RESULTS		
(the checked (✓) result applies based on fish survival rates of this test; NA - not applicable)		
✓	PASSED	LC50 > 750 mg/l (<40% dead in 750 mg/l conc.)
NA	FAILED	≥40% dead in 750 mg/l (close to passing - definitive test recommended)
NA	FAILED	LC50 < 400 mg/l (>60% dead in 400 mg/l conc.)