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Trinidad and Tobago Toxicity Test With OSE II Summary

The Trinidad and Tobago Government requires a Toxicity test from their local laboratory CARRIRI with whom the OSEI Corporation contracted the Toxicity test work to be carried out.

The 96-hour Acute (static) Toxicity test was conducted using *Metamysidopsis Insularis* between 1-5 days old at the test initiation. The test result was nontoxic. The US EPA set the standard for what is virtually non-toxic at 100 mg/l or greater.

This test is another example of how Non-Toxic OSE II and proves OSE II is safe for marine species.

Steven Pedigo

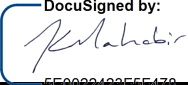
CEO OSEI Corporation



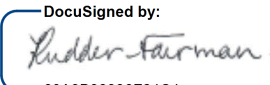
Mailing Address: Tunapuna Post Office, Trinidad and Tobago
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REPORT

Attn: Mr. Griffin Pedigo
Project Code: EC03870890/23
Client: OSEI Corporation
Client Address: 1212 Delmonte Circle Plano, Texas 75075, USA
Report Title: Analysis of one (01) Oilfield Chemical Sample
Report No: 01
Project Chief: N/A
Author(s): Gail Ram Ganesh / Monalisa Cooper

Reviewed By: 

6E0022403F6F470...
Kern Mahabir
Technologist / Deputy Laboratory Manager
Date: 2023/09/05

Authorized By: 

60A2B28238F24C4...
Eka Rudder-Fairman, Mphil.
Programme Leader & Laboratory Manager
Date: 2023/09/05

Copy No: 1 of 1 **Appendices:**

Report Version: **ORIGINAL** **RE-ISSUE** **AMENDED**



Introduction

The sample was submitted by the Client to CARIRI'S Petroleum & Sustainable Energy Services Laboratory located at UWI Campus, St. Augustine for determination of the following MSDS parameters:

- Appearance / Colour
- pH
- Solubility
- Toxicity
- Biodegradability

Toxicity and Biodegradability testing were conducted by other CARIRI laboratories.

Sample Collection

The following sample was submitted by the Client on June 20, 2023:

CARIRI SAMPLE NO.	CLIENT SAMPLE ID.
E0649/23	Oil Spill Eater II, OSE II

Testing and Methodology

Appearance	-	Visual
Solubility	-	Visual
pH	-	Direct Meter Reading
Toxicity	-	CAR.CHEM.TOX.2.1 ^{2,3}
Biodegradability	-	SMEWW 5220-COD ⁴ / EMICRO.TM.02 ⁵

1. This report relates only to the specific item(s)/sample(s) which has been tested, analysed, or calibrated by CARIRI. It shall be used solely for informing the client of the results of this specific item(s)/sample(s) and not any other. Information contained herein, shall not be used for any other purposes including, but not limited to, Certification, Advertising, and Marketing.

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3. Any Opinions and Interpretations expressed within are outside the scope of our Certification and/or Accreditation.

4. Tests/Calibrations marked "Not IAS Accredited" in this report are not in the IAS Accreditation schedule for our Laboratory.

Results

Date Analysed: 2023.06.23 – 2023.07.27

Analysis	Specifications	Sample # E0392/23
Appearance (Not IAS accredited)	Amber to Brown Liquid	Amber / Brown Liquid
Solubility in Water (Not IAS accredited)	100	100% soluble in water
pH (Not IAS accredited)	6.36 @ 22.3 °C	8.91
^a Toxicity, LC ₅₀ value (mg/L) (Not IAS accredited)	Non-Toxic	9.29
^b Biodegradability, %	100	100*

* Acceptable limit for Biodegradability is $\geq 70\%$.

^a See Appendix A attached.

^b See Appendix B attached.

References

¹ American Society for Testing and Materials (2018). Annual Book of ASTM Standards. American Society for Testing and Materials, Philadelphia, USA.

² U.S. EPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th Ed. U.S. Environmental Protection Agency, Office of Research and Development Environmental Monitoring Systems Laboratory, Cincinnati, Ohio. EPA/821/R-02/012

³ U.S. EPA. 1991. Trimmed Spearman-Kärber (TSK) program (Version 1.5). Ecological Monitoring Research Division, Environmental Monitoring Systems Laboratory, Cincinnati, Ohio, 45268

⁴ Organization for Economic Cooperation and Development (OECD). 1992. Guidelines for testing of chemicals- Biodegradability Test Guidelines: 301 D Closed Bottle Test

⁵ Baird, R.B., Eaton A.D., Rice E.W., Bridgewater L.L., Ed. (2017) Standard Methods for the Examination of Water and Wastewater, 23rd ed. Washington, D.C. USA: American Public Health Association / American Water Works Association / Water Environment Federation: USA

END OF REPORT

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APPENDIX A



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REPORT

Attention : Mrs. Eka Rudder-Fairman

Project Code : IC03890901/23

Client : PSES

Client Address : The UWI Campus, St. Augustine

Report Title : Analysis of Chemical


Report No. : 01/01

Project Chief : N/A

Author(s) : Mrs. Nandranie Janglee

Reviewed By : 
FC046F6C81704B7... **Date:** 2023/07/19

DR. LATISHA NICHOLAS
CHEMIST I & DEPUTY LABORATORY MANAGER

Authorized By : 
BED49217C492436 **Date:** 2023/07/19

MS. GAITRI JEETHAN
CHEMIST II & LABORATORY MANAGER

Copy No. : 1 of 1 **Appendices:**

Report Version : **ORIGINAL** **RE-ISSUE** **AMENDED**



Introduction

One (1) chemical sample was analysed for the determination of Acute Toxicity to the Mysid shrimp.

Sample Collection

The sample was submitted to the Analytical Chemistry Department on June 22, 2023.

Testing and Methodology

The 96-hour Acute (static) Toxicity test was conducted using *Metamysidopsis Insularis* between 1 to 5 days old at test initiation. Range-finder tests were conducted to determine the maximum and minimum sample concentrations for analysis. The definitive test was conducted with a minimum of five (5) sample dilutions plus a negative control at 25 ± 3 °C. Test solutions were prepared by mixing the product with dilution water (artificial saltwater, 20 ± 2 ppt). The health and sensitivity of the organism was verified using a Reference Toxicant (Potassium Chloride). The test was considered acceptable with a $\geq 90\%$ survival of the test species in the control.

The procedure for the Toxicity test followed CAR.CHEM.TOX.2.1, which is based on "*Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*" (U.S. EPA, 2002)¹. Toxicity is determined by calculation of an LC₅₀ value with a 95% Confidence Interval using Trimmed Spearman-Kärber² analysis. LC₅₀ refers to the concentration of a test sample which results in the mortality of 50% of the test population.

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Results

CARIRI Sample No.	Client Sample Description	LC ₅₀ value, mg/L
A1304/23	E0649/23: Oil Spill Eater II	9.29

Dates Analysed: 2023-06-26 to 2023-06-30

REFERENCES

1. U.S. EPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th Ed. U.S. Environmental Protection Agency, Office of Research and Development Environmental Monitoring Systems Laboratory, Cincinnati, Ohio. EPA/821/R-02/012.
2. U.S.EPA. 1991. Trimmed Spearman-Kärber (TSK) program (Version 1.5). Ecological Monitoring Research Division, Environmental Monitoring Systems Laboratory, Cincinnati, Ohio, 45268.

END OF REPORT

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APPENDIX B

 <small>Caribbean Industrial Research Institute</small>	Environmental Microbiology Internal Client Report	DOCUMENT# EMICRO.DOC.005
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EMICRO PROJECT NO. : IC03894694/23
REPORT NO. : 01
CLIENT ORDER/ REF NO. : EC03870890/23 – PSES – OCP [ex: *Oil Spill Eater II*]
DATE OF REPORT : August 3, 2023

RESULTS

(Apply to samples as received)

Table 1: Microbial Analysis

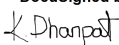
Laboratory Sample No.	Client Sample Label	SMEWW ¹ 5220-COD	EMICRO.TM.02 ²	
		Chemical Oxygen Demand (mg/l)	Biochemical Oxygen Demand (mg/l)	*Biodegradability (%) (Spec ≥70%)
V 1434/23	E 0649/23 – Oil Spill Eater II	30	44	100.0%
Dates of Analysis		2023.06.30	2023.06.29 to 2023.07.27	

*% Biodegradability is calculated from the ratio of Biochemical Oxygen Demand to Chemical Oxygen Demand.


REFERENCE

¹Baird, R.B., Eaton A.D., Rice E.W., Bridgewater L.L., Ed. (2017) *Standard Methods for the Examination of Water and Wastewater, 23rd ed.* Washington, D.C. USA: American Public Health Association/ American Water Works Association/ Water Environment Federation: USA

²Organization for Economic Cooperation and Development (OECD). 1992. *Guidelines for testing of chemicals – Biodegradability: 301D closed bottle test.*

DocuSigned by:


DB5FCCA2AA004AA...
Kavir Dhanpat
Deputy Laboratory Manager
Environmental Microbiology Laboratory

DocuSigned by:


0DFD001E2CD5430...
Tricia Singh
Laboratory Manager
Environmental Microbiology Laboratory



SERVICE CONTRACT

Document #: CAR.F.15

Tunapuna Post Office
Trinidad and Tobago
Telephone: (868) 299-0210
Campus Fax: (868) 662-7177
Macoya Fax: 663-9771 ext 3160
Email: mail@cariri.com

Contract No: EC03870890/23
Version No: 1
Department: PSES
Quotation Ref. No.: PSES-Q-057-23
Client Ref. No.: _____

Attention: **Mr. Michael Joseph/Mr. Griffin Pedigo**

Client: **OSEI CORPORATION**
Address: **1212 DELMONTE CIRCLE PLANO,
TEXAS 75075, USA**

Phone: _____
Fax: -
Email: hardestofmen@gmail.com

Start Date: 2023.06.20

Estimated Completion Date: 2023.08.16

Project Description and Work Required:

Analysis of one (01) Oilfield Chemical -Oil Spill Eater II, OSE II for the following parameters:

1. Appearance - Visual
 2. pH - Direct Meter Reading
 3. Solubility - Visual
 4. Biodegradability Testing - EMICRO. TM.02²
 5. Toxicity Testing _ CAR. CHEM. TOX.2.1
- CARIRI Sample Number: E00649/23

Fee: US \$888.89 VAT: \$0.00 Total Fee: \$888.89 Report Dispatch Method: Email

Terms of Payment: PAYMENT IN ADVANCE (Payment made in USD)

For and on behalf of Client

For and on behalf of CARIRI

Name [block letters]

DocuSigned by:

00A3B38336F24C4...
EKA RUDDER-FAIRMAN, PROGRAMME LEADER
2023/09/05

Signature

Date

Position

Date

Date

See Terms and Conditions on page 2



SERVICE CONTRACT

Document #: CAR.F.15

EC03870890/23

Terms and Conditions of Contract:

- 1) Any test or calibration report resulting from this contract relates only to the specific item(s)/sample(s) which has been collected, tested, analysed, or calibrated by CARIRI. It shall be used solely for informing the client of the results of this specific item(s)/sample(s) and not any other. Information contained herein, shall not be used for any other purposes including, but not limited to, Certification, Advertising, and Marketing
- 2) The report resulting from this contract may not be reproduced other than in full, except with the prior written authorization from the Executive Management of CARIRI
- 3) The Client shall indemnify CARIRI against all actions proceedings claims or demands in any way connected with this contract brought or threatened against CARIRI by a third party except to the extent that CARIRI is liable to the Client under this contract.
- 4) In any event and notwithstanding anything contained in this contract, CARIRI's liability in contract, tort (including negligence or breach of statutory duty) or otherwise arising by reason of or in connection with this contract shall be limited to the sum representing the fee payable by the Client to CARIRI under this contract.
- 5) CARIRI is accredited by International Accreditation Service Inc. (IAS) to ISO/IEC 17025:2017. Details on the scope of accreditation may be viewed at <http://www.iasonline.org> using our Accreditation #'s: TL-397 and CL-134
- 6) The price quoted is for 1 copy of the final report. Additional copies (including fax copies) shall incur additional charges. The contract does not include any activity outside what is disclosed in its scope.