

OSEI CORPORATION: ЗАМЕНА ДИСПЕРГАТОРОВ ЭФФЕКТИВНОЙ ТЕХНОЛОГИЕЙ OSE II¹



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Руководство компании OSEI Corporation пригласили в Агентство США по защите окружающей среды (Environmental Protection Agency – EPA) с целью обсуждения замены неэффективных диспергаторов эффективной нетоксичной технологией ликвидации последствий разливов нефти OSE II

В настоящее время диспергаторы приобрели репутацию технологии, усугубившей обострение проблем разлива нефти в океане, способствуя затоплению нефти в воде, где обитает 60 % видов морских животных и ослабляя их способность к выживанию. В настоящее время существуют значительные опасения, что вся пищевая цепь региона Мексиканского залива находится под серьезной угрозой в результате использования большого количества диспергатора Corexit в процессе ликвидации в апреле 2010 г. последствий разлива нефти после аварии на буровой установке Deepwater Horizon. Менее известный факт заключается в том (согласно данным официального руководства EPA), что после эффективного воздействия диспергаторов 45 % разлившейся нефти должно затонуть в течение 30 минут и больше ничего, никаких, соответствующих стандартным нормативам по очистке функций. Другими словами, диспергаторы никоим образом не являются решением проблемы распространения нефтяного разлива на побережье или предотвращения вреда дикой природе — наоборот они создают дополнительную и серьезную проблему вторичного загрязнения региона разлива и усугубляют осложнения. Фактически применение диспергаторов становится причиной существенного усугубления ущерба природным ресурсам, скандальных судебных процессов и существенного увеличения затрат на ликвидацию последствий разлива нефти (см. Study и Jan 2012 Editorial).

В процессе решения кризисной ситуации в Мексиканском заливе EPA столкнулось с протестами

общественности, яростно возражающей против использования для ликвидации последствий разлива нефти в Мексиканском заливе токсичных диспергаторов, ссылаясь при этом на данные научных исследований, подтверждающие серьезный побочный эффект. Это вынудило EPA передать требования общественности руководству компании BP, чтобы они выбрали для ликвидации последствий аварии менее токсичные диспергаторы. Общественность быстро поняла, что воздействие следующего используемого диспергирующего состава оказалось не намного лучше с точки зрения эффективности ликвидации аварийных разливов нефти и EPA вынуждено было попросить BP резко сократить использование всех диспергаторов.

В ноябре 2011 г. после получения и изучения научных документов (представленных на 373 страницах), которые подтверждали эффективность технологии Eater II ликвидации последствий, вызванных применением диспергаторов, EPA обратилось в компанию OSEI с просьбой о встрече с руководителем компании Steven Pedigo. По просьбе EPA также приведена ссылка на информацию о применении OSE II® в 2003 г. в индейской резервации Osage Indian Reservation и презентации, в которой приняли участие несколько должностных лиц EPA, на которой были обнародованы первые результаты эффективного использования военноморским флотом США (Navy) технологии OSE II в процессе ликвидации 100 разливов нефти в заливе Сан-Диего, штат Калифорния, США.

¹Оригинал и перевод статьи размещены на CD (Original and translated versions of article are on CD). Рабочие ссылки приведены в оригинале на CD.

В своем письме¹ г-ну Pedigo от 18 ноября 2011 г. специалисты EPA выразили заинтересованность в перспективах разработки технологий OSE II биологической очистки как эффективного средства реагирования в чрезвычайных ситуациях и основного средства очистки воды и ликвидации последствий разлива нефти.

11/18/11 – EPA MEETING REQUEST EMAIL

From: Mason.Steve@epamail.epa.gov

To: stevenosei@msn.com, broyles.ragan@epa.gov, staves.james@epa.gov

Steven,

In response to your letter on October 1, we would like to meet with you to discuss your concerns and determine our path forward. In addition, the Region 6 Regional Response Team (RRT) will be considering the potential of developing a Bioremediation Emergency Response Plan, as other regions have developed. If this is successful, we would like to have you assist in the development of such a document, working with the RRT Industry Workgroup.

Please contact me to see when you would be available to meet with Ragan Broyles, Jim Staves, and myself after December 1, at 214-665-2276, or email me with potential dates you are available to meet. We can either meet at our offices, or other location around Dallas.

Faithfully yours
Steve

«Frequently, my thoughts get bored and walk down to my mouth. Often, this is a bad thing».

Steve Mason, EPA Region 6 (6SF-PE)
1445 Ross Avenue, Dallas, TX 75202
214-665-2276 / 214-665-2278 fax

Было проведено более 11 успешных демонстраций применения компанией BP технологии OSE II для ликвидации последствий разлива нефти, многие из которых транслировались на каналах ABC and Fox news. Кроме того, компания BP успешно протестировала OSE II в процессе очистки воды от нефти, смешанной с токсичными диспергаторами; OSE II биологически очистила как нефть, так и диспергаторы. Специалисты Министерства внутренних дел США (US Department of Interior) сделали вывод, что OSE II – это лучший продукт (по сравнению как с диспергаторами, так и с механической очисткой), который был протестирован компанией BP при ликвидации последствий разлива нефти в Мексиканском заливе. По результатам сравнительных тестов,

проводимых US Department of Interior (Interior test), технология OSE II очистила 67 % нефти, в то время как диспергаторы оказались абсолютно неэффективными, очистив 0 % воды и напротив, способствуя увеличению объемов затонувшей нефти, а механические средства смогли обеспечить примерно от 2 до 8 % очистки. Технология OSE II намного превзошла механические средства очистки и диспергаторы (см. ссылки на информацию о результатах тестирования, приведенную ниже).

Перспективное развитие технологии OSE II внесет изменения в ликвидацию аварийных разливов нефти и является важным признаком того, что EPA, наконец, признало полную неэффективность диспергаторов. OSEI Corporation уже помогла Ассоциации, предоставив документы об успешном использовании OSE II (ранее подготовленные RRT EPA, но затем утерянные в архивах), тем самым открыв двери для более быстрого прогресса и действительной и полной ликвидации последствий разлива нефти в Мексиканском заливе и будущих разливов. Технология OSE II уже утверждена планом EPA реагирования в чрезвычайных ситуациях и в настоящее время используется во всем мире, охраняя окружающую среду, а также помогая сокращать суммарные расходы компаний и ответственных сторон на ликвидацию последствий разлива.

ССЫЛКИ НА ДОКУМЕНТЫ:

- Gulf Rescue Alliance Editorial: EPA Protocols violate the Clean Water Act
- How does OSE II Work? Emulating Mother Nature White Paper
- Summary of Dept of Interior Test Results
- U.S. Department of Interior BOEMRE's testing of OSE II
- Science and Third Party Endorsements of OSE II
- EPA Correspondence with OSEI
- Examples of OSE II in Action:
<http://osei.us/875> – Demonstrating the application of OSE II® on crude oil for Japanese distributor

<http://osei.us/870> – Demonstrating the application of OSE II® on crude including eight days to complete bioremediation for Mexican distributor and concluding remarks

OSE II demonstration on ABC news for Louisiana officials

<http://osei.us/830>

OSE II demonstration fro Mississippi Senator Gollot

<http://osei.us/819>

OSE II demonstration on BP spill at Grande Isle Louisiana

<http://osei.us/828>

¹Текст переписки приведен в оригинальном варианте.

OIL SPILL EATER II TECHNICAL INFORMATION IN THE US EPA NOTEBOOK



LINK <http://www2.epa.gov/emergency-response/oil-spill-eater-ii>

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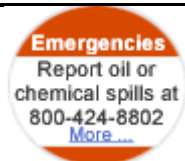
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OIL SPILL EATER II



TECHNICAL PRODUCT BULLETIN #B-53
USEPA, OFFICE OF EMERGENCY MANAGEMENT
REGULATION AND POLICY DEVELOPMENT DIVISION
ORIGINAL LISTING DATE: AUGUST 26, 1996
REMOVAL DATE: AUGUST 16, 2005
RELISTING DATE: SEPTEMBER 18, 2009
"OIL SPILL EATER II (OSE II)"

I. NAME, BRAND, OR TRADEMARK

OIL SPILL EATER II (OSE II)

Type of Product: Bioremediation Agent (Biological Enzyme Additive [previously listed as a Nutrient Additive])

II. NAME, ADDRESS, AND TELEPHONE NUMBER OF MANUFACTURER/CONTACT

OSEI Corporation (Formerly Sky Blue Chems)
P.O. Box 515429
Dallas, TX 75251-5429

Phone: (972) 669-3390
E-mail: oseicorp@msn.com
Web Site: www.osei.us
(Mr. Steven Pedigo, Chairman, CEO, Inventor)

III. NAME, ADDRESS, AND TELEPHONE NUMBER OF PRIMARY DISTRIBUTORS

OSEI Corporation (Formerly Sky Blue Chems)
P.O. Box 515429
Dallas, TX 75251-5429
Phone: (972) 669-3390
E-mail: oseicorp@msn.com
Web Site: www.osei.us
(Mr. Steven Pedigo, Chairman, CEO, Inventor)

IV. SPECIAL HANDLING AND WORKER PRECAUTIONS FOR STORAGE AND FIELD APPLICATION^o

1. Flammability: Water-based, non-flammable
2. Ventilation: Needs no ventilation; aqueous-based product; does not emit hazardous vapors
3. Skin and eye contact; protective clothing; treatment in case of contact: OSE II is not a primary dermal irritant. Avoid eye contact, and wear goggles if possible for the spray to come in direct contact with eyes. Facilities for quick and copious eye flushing should be provided and prompt medical attention should be sought if exposure and irritation persists. Protective rubber gloves are suggested during handling. Before mixing the product has a smell of fermentation. The product does not give off any harmful vapors.
- 4.a. Maximum storage temperature: 120°F
- 4.b. Minimum storage temperature: None; OSE II can freeze and thaw without adverse effects
- 4.c. Optimum storage temperature range: 72°F
- 4.d. Temperatures of phase separations and chemical changes: 120°F

V. SHELF LIFE

OSE II has a recommended shelf life of 5 years. After 5 years at optimum storage temperature, there is an approximate 10% decrease per year in product capability.

VI. RECOMMENDED APPLICATION PROCEDURE

1. Application Method:

A. Use surface spray apparatus, such as small hand held tanks, back pack, large mixing tanks with mechanical pumping devices, vessels with booms for spraying wide paths, or spray devices on airplanes or helicopters.

B. OSE II can be applied by eductor systems from vessels, fire trucks, etc. Set the eductor system to 2% and apply 1 gallon of mixed OSE II to each spilled gallon of hydrocarbon.

2. Concentration/Application Rate:

General - OSE II generally takes 3 to 30 minutes to penetrate the molecular walls of hydrocarbons. However, once you spray OSE II on the hydrocarbons, OSE II attaches itself and will eventually engulf the hydrocarbons regardless of where the hydrocarbons may spread on the surface of salt or fresh water. Additionally, once you spray OSE II, the hydrocarbons cannot attach itself to the shoreline, rocks, or any equipment in its path. OSE II breaks down the adhesion properties of hydrocarbons and causes hydrocarbons to float, thereby, eliminating secondary contamination of the water column or any other areas, and holding the contaminated area to the waters surface, the original contaminated area.

If OSE II is to be used on ocean spills or on intertidal zones OSE II should be mixed with ocean water.

If OSE II is to be used on lakes, rivers, streams, ponds, or on land mix the product with water from a lake, stream, or pond.

If you are performing a clean up, make sure the water used to mix with OSE II, and the water used to keep the area saturated, is the type of water normally associated with that area.

If you use fresh water in an area normally contacted with salt water or vice versa, the different types of bacteria and competition could occur, not to mention the problems with salinity for fresh water organisms.

[Note: Do not mix tap water with OSE II if possible: Chlorine in tap water slows bacterial enhancement]

Spills on Water:

Dilute each gallon of OSE II with 50 gallons of fresh, brackish, or salt water - depending on the water associated with the area that has been impacted by the spill. Apply OSE II at a ratio of 1 gallon mixed OSE II to each gallon of hydrocarbon spilled. Apply using hand held sprayers, tank sprayers, booms from vessels, helicopters, or airplanes; by spraying the perimeter first then working toward the middle of the spilled area. Next spray the entire surface of the spill. If the spill is very heavy (more than 2 inches thick) it is recommended that OSE II be applied every day until you have met a 1:1 ratio of OSE II and water mixture to spilled oil/hydrocarbons.

Use 1 gallon OSE II for every 50 gallons of hydrocarbons.

Use 1 drum of OSE II for every 2,750 gallons of hydrocarbons.

If you know gallons of hydrocarbons spilled, multiply gallons of hydrocarbons by 0.02 to get amount of OSE II needed [gallons of hydrocarbons x 0.02 = gallons of OSE II].

If you know barrels of crude oil spilled, multiply barrels of crude oil by 0.015 to get drums of OSE II needed [barrels of crude oil x 0.015 = drums of OSE II].

If you do not know gallons of hydrocarbons or barrels of crude oil, multiply size of spill by 0.0023 to get drums of OSE II needed or by 0.12 to get gallons of OSE II needed [(yards long x yards wide x inches thick) x 0.0023 = drums of OSE II or (yards long x yards wide x inches thick) x 0.015 = gallons of OSE II].

Intertidal Zone:

Mix each 55 gallon drum of OSE II with 2,750 gallons of fresh, brackish, or salt water. The water used is determined by the type of water associated with the site. OSE II should be applied as the tide recedes (if there is a tide) and once the tide comes in the application should cease until the tide recedes again. Additional applications should only be warranted if spill has been allowed time to percolate into the depths of the soil.

If there is no tide, but waves have pushed the spill into the intertidal zone, then there will be direct access to the spill at all times. If possible use string or stakes to grid off the beach or intertidal zone area, and then you can calculate how much premixed OSE II to apply to a given area. If unable to grid off an area then calculate how much OSE II to apply and then determine how much premixed OSE II will flow through a nozzle (gallons per minute) then let application technician know how many gallons to apply in a given area and this can be determined by applying product for a certain time period to get the correct amount of OSE II applied to gain the 1:1 ratio.

Note: If the intertidal zone is associated with the sea then mix OSE II with salt water. If the spill area is in an area of brackish water then mix OSE II with brackish water. If the intertidal zone is associated with fresh water such as lakes, rivers, streams, ponds, creeks, aquifers, or drinking water wells then use fresh water to mix OSE II.

3. Conditions for Use:

OSE II can remediate hydrocarbon-based material including chlorinated hydrocarbons, PCB's, dioxins, and some pesticides.

As the age of spilled hydrocarbons increases, the time necessary for bioremediation increases. In general, fresh crude, gasoline of BTEX takes from 72 hours to 30 days to completely bioremediate.

Variations of sea water salinity should have no effect, but as long as microbial life can exist, then OSE II will be effective.

OSE II bioremediation slows somewhat at temperatures below 40°F. OSE II however, will continue to work at any liquid water temperature that will sustain microbial life.

VII. TOXICITY AND EFFECTIVENESS

**a. Effectiveness:
Summary Data Table:**

DAYS	PRODUCT 3 REPS/PROD	TOTAL MEAN ALKANES (ppm)	RED% 28 DAYS	TOTAL MEAN AROMATICS (ppm)	RED% 28 DAYS
0	CONTROL	43,170	-	11,435	-
	NUTRIENT	40,569	-	11,785	-
	OSE II	41,730	-	12,155	-

7	CONTROL	39,250	9.1	10,355	9.4
	NUTRIENT	34,815	14.2	9,898	16.0
	OSE II	26,316	36.9	8,072	33.6
28	CONTROL	35,797	17.1	9,534	16.6
	NUTRIENT	26,507	34.7	8,938	24.2
	OSE II	4,273	89.8	1,268	89.6

Results of Gravimetric Analysis:

Percentage (%) Decrease in Weight of Oil on Day 28

Control: 16.5%

Nutrient: 52.0%

Product: 85.4%

VIII. MICROBIOLOGICAL ANALYSIS

1. Listing of each component of the total formulation, other than enzymes, by chemical name and percentage by weight: CONFIDENTIAL
2. Enzyme Names: CONFIDENTIAL
3. I.U.B.: CONFIDENTIAL
4. Source of Enzymes: Fermentation process
5. Units: No less than 1% and no more than 50% by weight
6. Specific Gravity: 1.05
7. Optimum Conditions:
 - a. pH: 7.0
 - b. Temperature: 72°F
 - c. Salinity Ranges: Fresh water to salt water
 - d. Maximum and Minimum pH: 3.5 - 8.0
 - e. Maximum and Minimum Temperature: 28°F - 128°F
 - f. Maximum and Minimum Salinity Levels - Salinity level above that will support microbial activity will adversely effect OSE II's performance
 - g. Enzyme Shelf Life: Up to 5 years when properly stored
 - h. Enzyme Optimal Storage Conditions: 72°F is optimal, enzyme range is freezing to 120°F, never leave OSE II in direct sunlight for more than a couple of hours

IX. PHYSICAL PROPERTIES

NA

X. ANALYSIS OF HEAVY METALS, CYANIDE, AND CHLORINATED HYDROCARBONS

NA

Last updated on Tuesday, October 13, 2009
<http://www.epa.gov/emergencies/content/ncp/products/oseater.htm>

How to get a product on the US EPA NCP list

<http://www2.epa.gov/emergency-response/national-contingency-plan-subpart-j#howto>
Emergency Response National Contingency Plan Subpart J

One of EPA's top priorities is to prevent, prepare for, and respond to oil spills that occur in and around inland waters of the United States. EPA is the lead federal response agency for oil spills occurring in inland waters. The [U.S. Coast Guard](#) is the lead response agency for spills in coastal waters and deepwater ports. Subpart J of the [National Oil and Hazardous Substances Pollution Contingency Plan \(NCP\)](#) directs EPA to prepare a schedule of dispersants, other chemicals, and oil spill mitigating devices and substances that may be used to remove or control oil discharges.

[NCP Product Schedule](#)

[Environmental Monitoring for Atypical Dispersant Operations: Including Guidance for Subsea Application and Prolonged Surface Application Revisions to Subpart J of the NCP under Consideration](#)

[NCP Product Schedule Technical Notebook](#)

[How to List a New Product on the NCP Product Schedule](#)

[NCP Subpart J Regulations](#) [Effectiveness and Toxicity Testing](#) [Disclaimer Information](#) [For More Information](#)

The [NCP Product Schedule \(April 2014\) \(PDF\)](#) is also available for download in its entirety.

EPA maintains the NCP Product Schedule, which lists the following types of products that are authorized for use on oil discharges:

Bioremediation agents Dispersants Surface washing agents Surface collecting agents Miscellaneous oil spill control agents
See [Definitions of Product Categories](#) See [Alphabetical List of NCP Product Schedule Products with Links to Technical Product Summaries](#)

Design for the Environment

Note: Products may be eligible for recognition by EPA's [Design for the Environment \(DfE\) Program](#) as a safer oil spill treatment. The DfE Program labels products that have met its stringent criteria for human health and environmental safety.

NCP Product Schedule Technical Notebook

The [NCP Product Schedule Technical Notebook \(April 2014\) \(PDF\)](#) presents **manufacturer's** summary information on the conditions under which each of the products is recommended to be used. **Manufacturer** information may provide handling and worker precautions, storage information, recommended application procedures, physical properties, and toxicity, effectiveness, or other analyses.

Disclaimer: The listing of a product on the Product Schedule does NOT mean that EPA approves, recommends, licenses, certifies, or authorizes the use of the product on an oil discharge. The listing means only that data have been submitted to EPA as required by Subpart J of the National Contingency Plan, [Section 300.915](#). (Source: [40 CFR § 300.920](#) (e))

There is an established process that manufacturers must follow to have a product listed on the NCP Product Schedule.

Begin by reviewing data requirements in section 300.915 of Subpart J of the NCP Product Schedule.

Determine [product category](#) (e.g., dispersant, surface washing agent, etc.)

Fulfill each of the data requirements for selected product category, including effectiveness and toxicity testing (if applicable). If you need assistance locating a laboratory to help fulfill these requirements, please call the [NCP Product Schedule Information Line](#).

Send a hard copy of **all** data requirements for review to: NCP Product Schedule Manager U.S. Environmental Protection Agency Ariel Rios North Building - Mail Code 5104-A Room 6450T Washington, D.C. 20460

If you have further questions or require more information, please call the [NCP Product Schedule Information Line](#).

Subpart J Regulations

EPA is currently making revisions to the Subpart J regulation to clarify and update the Product Schedule listing procedures. These updates may include effectiveness and toxicity testing. Once the proposed rule is posted to the docket, there will be a public comment period for providing questions and concerns. The compiled comments will be addressed in the final rule. Office of Management and Budget Agenda: [Revisions to the National Oil and Hazardous Substances Pollution Contingency Plan; Subpart J Product Schedule Listing Requirements](#).

[NCP Subpart J: Use of Dispersants and Other Chemicals - 40 CFR 300.900 - 300.920 \(PDF\)](#)

[NCP: Definitions - 40 CFR 300.5 \(PDF\)](#)

[Relevant Federal Register Notices](#)

Effectiveness and Toxicity Testing

For the products on the schedule, EPA provides [NCP Product Schedule Toxicity and Effectiveness Summaries](#) for each product category. Appendix C to 40 CFR part 300 describes methods for required effectiveness and toxicity tests for specific product categories. See: [40 CFR part 300 Appendix C | PDF](#) (22 pp, 284 K, [About PDF](#))

The listing of a product on the NCP Product Schedule does not constitute approval of the product. To avoid possible misinterpretation or misrepresentation, any label, advertisement, or technical literature that refers to the placement of the product on the NCP Product Schedule must either reproduce in its entirety EPA's written statement that it will add the product to the NCP Product Schedule under Sec. 300.920(a)(2) or (b)(2), or include the disclaimer shown below. If the disclaimer is used, it must be conspicuous and must be fully reproduced. Failure to comply with these restrictions or any other improper attempt to demonstrate the approval of the product by any National Response Team (NRT) or other U.S. Government agency shall constitute grounds for removing the product from the NCP Product Schedule. [40 CFR 300.920(e)]

[PRODUCT NAME] is on the U.S. Environmental Protection Agency's NCP Product Schedule. This listing does NOT mean that EPA approves, recommends, licenses, certifies, or authorizes the use of [PRODUCT NAME] on an oil discharge. This listing means only that data have been submitted to EPA as required by subpart J of the National Contingency Plan, Sec. 300.915.

The US Congress required the US EPA to keep a list of products that can be legally used on US Navigable waters, which is why there is a an NCP list.