

Shemical®

Safety, Health & Environment Chemicals

Biodegradable and Environmentally
Friendly Oil Spill Cleaner

ERS 101 – Oil Spill Cleaner



Shemical International Sdn. Bhd.

(A member of SHEPROS GROUP OF COMPANIES)



ERS 101 - Providing Excellent Environmental Solutions

Today's Oil Spill Market place is demanding cost effective, efficacious products that are milder and less harmful to the environment and its inhabitants. Environmental Regulatory around the world have necessitated the development of eco-friendly, renewable, green chemistries to meet formulation requirements. We at SHEMICAL take the challenge and develop ERS 101 to meet the requirements of Environmental Regulatory.

The Advantages of ERS 101 Oil Spill Cleaners include:

- Superb degreasing properties
- Able to mix with seawater or freshwater
- Breaking oil into more micro and nano emulsions for easy decay
- Can be used to clean oil contaminated equipments, animals and workers
- Exhibit very low human and aquatic toxicity
- Readily Biodegradable
- Tolerant of high electrode tank mix solutions
- Enhanced systemic activity through non-phytotoxic translocation
- Improved tank mix compatibility with water
- Low eye and skin irritancy
- Outstanding hydrotropic properties over a wide range of pH conditions

Excellent Performance properties Based on Renewable Raw Materials

ERS 101 Oil Spill Cleaner is readily biodegradable and exceptionally mild oil cleaner. Unlike conventional oil spill dispersants, the formulation of ERS 101 is based entirely on renewable raw materials which are derived from corn and natural fatty alcohol from coconut and palm kernel oils.

ERS 101 – Oil Spill Cleaner

Product Description:

ERS 101 is one of the top performance oil spill cleaner which can clean almost all kinds of oils and greases.

ERS 101 is a non-toxic, low-foaming, non skin irritating, biodegradable and environmental friendly oil spill cleaner. It is made of powerful Nano Biotech Colloidal Micelles (NBCM) of non-toxic natural plant extracts, plant derivatives and biodegradable surfactants. NBCM possesses the power and capacity to break down almost all types of aqueous organic molecules and hydrocarbons. It can be used with either plain water or sea water without any difficulties.



ERS 101 does not contain acids, fragrance, petroleum distillates, soaps, chemical thickening agent, nitrate, enzyme, phosphate, synthetic alcohol, animal fatty acid, aliphatic and aromatic hydrocarbon toxic solvents, non-biodegradable surfactants, CFC and ozone depleting substances.

Application:

ERS 101 effectively removes oils, grease and odor. It is specially formulated for deep cleansing on rocks, soil and sand. It is a superb product for cleaning animal fur contaminated with oil and grease without irritating the animal skin. It can also be used to wash personal protective gear and tools during oil spill.

Directions:

Rocks, soil and sand: Apply desired amount of ERS 101 onto contaminated areas by either spraying or mopping. Leave it for at least 15 minutes. Rinse off thoroughly with either plain water or sea water. For seaside rocks and beach, after the application of ERS 101, leave it and wait for the sea water high tide to rinse it off.

Animal fur: Apply desired amount of ERS 101 onto the contaminated fur using hand. Lather and rinse off thoroughly with either plain water or sea water.

Underground: Soil drilling can be used to reach the contaminated underground areas. Use high pressure cement grout pumps to pump ERS 101 to the designated contaminated areas. ERS 101 will emulsify with the oils of the contaminated soils and break it into micro and nano emulsions for easy decaying.

ERS 101 – OIL SPILL CLEANER APPLICATIONS**Cleaning Animals**

(In respect of animal rights, we only use a toy for demonstration)



1 A teddy bear is used for demo.



2 A glass bowl is poured with contaminated dirty oil.



3 The teddy bear is soaked into the dirty oil.



4 The whole teddy bear is covered with dirty oil.



5 The teddy bear is thoroughly sprayed with oil spill cleaner.



6 The teddy bear is lathered thoroughly using oil spill cleaner.



7 The teddy bear is flushed with clean water



8 The teddy bear is clean.

ERS 101 – OIL SPILL CLEANER APPLICATIONS

Oil Spill Cleaning



1

A clean site is selected which consists of soil, sand, plants and stones.



2

The site is poured and contaminated with dirty oil.



3

The contaminated site is sprayed with SHEMICAL oil spill cleaner.



4

Further spraying of cleaner



5

The site is thoroughly sprayed with cleaner.



6

Reaction between the oil and cleaner can be seen.



7

Flushing the roots and dry leaves .



8

Thorough flushing of the site.



9

The contaminated area is cleaned.

ERS 101 – OIL SPILL CLEANER APPLICATIONS**Floor Cleaning**

1 Dirty motor oil on the floor.



2 Application of cleaner.



3 Further application of cleaner.



4 Cleaner reacts with dirty oil.



5 Cleaner is mixed thoroughly with dirty oil using brushing application.



6 Reaction between the cleaner and dirty motor oil.



7 Flushing the roots and dry leaves.



8 The oil is uplifted from the floor during flushing/rinsing.



9 The oil is flushed easily.



10 The floor is thoroughly cleaned from oil.

ERS 101 – OIL SPILL CLEANER APPLICATIONS

Hand Cleaning



ERS 101 – OIL SPILL CLEANER APPLICATIONS

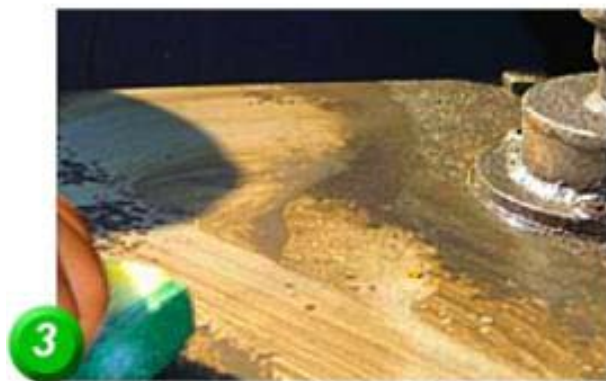
Stainless Steel Cleaning



Stainless steel tank contaminated with filler and thick lubricant oil for years.



Application of industrial degreaser with a normal sponge.



Scrub the degreaser thoroughly



The result after rinsing with water after only one application.

ERS 101 – OIL SPILL CLEANER APPLICATIONS

Car Component Cleaning (I)



ERS 101 – OIL SPILL CLEANER APPLICATIONS

Car Component Cleaning (II)



PHYSICAL PROPERTIES of ERS 101

Composition:

100% of Nano Alpha 10

Technical Data:

ITEM	VALUE
Active Matter	68 - 72%
Flash Point	>93°C Closed Cup
Ash Content	0.0 - 2.0
Hidrophilic-Lipophilic Balance (HLB)	13.6
Density	1.17 kg/liter
Viscosity (25°C)	4,800 cPs
pH-Value (10% Solution)	7.0 - 9.5
Color (Extinction Co-Efficient)	6 - 20
Specific Gravity (25°C)	1.1680
Acute Toxicity Test (96 hours)	Not hazardous to the aquatic environment.
Biodegradability	Reach 96% of degradation at day 28 and it is readily biodegradable.

Acute Toxicity Test of Nano Alpha 10

Test Method: OECD Guideline for Testing of Chemicals Method 203 Fish

Result: Not hazardous to the aquatic environment.



Pusat Teknologi Alam Sekitar dan Bioproses Environment and Bioprocess Technology Centre

Bangunan 15, SIRIM Berhad, Shah Alam, Selangor Darul Ehsan.

Tel : 60-3-5544 6550 / 6598 Faks : 60-3-5544 6590



RESULTS SUMMARY

Company Name : Chemical International Sdn Bhd

Address : Lot 109A, Jalan Gebeng 1/6,
Kaw. Perindustrian Gebeng
26080 Kuantan, Pahang
(Attn : Mr. Ng)

Request : 96-hour Fish (Tilapia), Acute Toxicity Test of Nano Alpha 10

Your Ref No.	
SIRIM Ref. No.	237/16/712
Job No.	J026/08
Report No.	R054/08
Date of Issue	17/03/08
No. of pages	11

SAMPLE DESCRIPTION

One liquid sample coded as "Nano Alpha 10" was received on 01 Feb 2008.

TEST METHOD

(1) *Fish acute toxicity test according to OECD Guidelines for Testing of Chemicals - Method 203 Fish, Acute Toxicity Test

RESULT:

Sample Code	Appearance	LC ₅₀ (96 hour) (v/v)
Nano Alpha 10	Brownish	880 mg/L (0.088%)

Note: Refer to Appendix A – R054-1/08 for details.

INFERENCE

The classification system for substances hazardous to the aquatic environment according to The Globally Harmonised System (GHS) of Classification and Labeling of Chemicals (2005) is shown below.

Toxicity Category (Acute toxicity for 96 hr LC ₅₀ for crustacea)	Classification Limit
Acute I	≤ 1 mg/l
Acute II	> 1 - ≤ 10 mg/l
Acute III	> 10 - ≤ 100 mg/l

Based on the criteria for the harmonized classification system for substances, the "Alpha Nano 10" is classified as "Not hazardous to the aquatic environment" as the LC₅₀ value is above 100 mg/l.

(The inferences expressed herein are outside the scope of accreditation)

Name: **Tan Yong Nee**
Designation: **Researcher**
Fax No: **03-55446590**
Tel. No: **03-55446591**

SIRIM Berhad
(No. Syarikat 387474 - V)
1, Persiaran Dato' Menteri
Seksyen 2, Peti Surat 7035
40911 Shah Alam
MALAYSIA
Tel: 60-3-5544 6000
Hotline: 60-3-5510 3535
Faks: 60-3-5510 8095
Website: www.sirim.my

The results contained in this report relate only to samples /items received and analysed by SIRIM Environment and Bioprocess Technology Centre. This report shall not be reproduced in any form without the written approval of SIRIM Berhad.



SIRIM
MS ISO 9002
Reg. No. AR 2176



MS ISO/IEC 17025
TESTING
SAMM NO. 195

Biodegradability Test of Nano Alpha 10**Test Method:** Reference to International Standard ISO 10707:1994(E)**Result:** Reach 96% of degradation at day 28 and it is readily biodegradable.**TEST REPORT: S08CHM01431-01-THY-CORR02**

Date: 19 MAR 2008

Tel: +65 68851291 Fax: +65 67784301

Client's Ref: QM-0108-107Rev2

Email: Huayi.CHEN@tuv-sud-psb.sg

Note: This report is issued subject to TÜV SÜD PSB's "Terms and Conditions Governing Technical Services".
The terms and conditions governing the issue of this report are set out as attached within this report.



PSB Singapore

Choose certainty.
Add value.**SUBJECT**

Analysis of SHEMICAL NANO ALPHA 10

CLIENT

Shemical International Sdn Bhd
C/o East Coast Technology Park
Lot 109A, Jln Gebeng 1/6
Kawasan Perindustrian Gebeng
26080 Kuantan,
Pahang Darul Makmur
Malaysia

Attn: Ng Kee Wee

SAMPLE SUBMISSION DATE

31 Jan 2008

DESCRIPTION OF SAMPLE

One sample of SHEMICAL Solution was received.

1) SHEMICAL Nano Alpha 10

METHOD OF TEST

1) Reference to International Standard ISO 10707:1994(E)

Evaluation in an aqueous medium of the "ultimate" aerobic biodegradability of organic compounds – Method by analysis of Biochemical Oxygen Demand (Closed bottle test).



Laboratory:
TÜV SÜD PSB Pte. Ltd.
Testing Services
No. 1 Science Park Drive
Singapore 118221

Phone : +65-6885 1333
Fax : +65-6778 8670
E-mail: testing@tuv-sud-psb.sg
www.tuv-sud-psb.sg
Co. Reg : 199002667R

Regional Head Office:
TÜV SÜD Asia Pacific Pte. Ltd.
3 Science Park Drive, #04-01/05
The Franklin, Singapore 118223
TÜV®

OTHER EMERGENCY RESPONSE PRODUCTS

SUPERSORB

Product Description

Supersorb is developed by using the technology of high surface area mineral fillers and organic cellulose adsorbents. It uses the concept of “cellulose/filler attraction” or the force of adhesion between solid and liquid in cellulose / fillers.

Supersorb is a superior value product for commercial and household market. It can be applied from smooth to rough hard surfaces. The fine mineral fillers enable it to adsorb deep inside the pores of the rough surfaces. It gives a very clean and dry absorption over the spills. Because of the upper and lower crystal surface dissimilarity, the mineral fillers of Supersorb can bond to itself resulting most of the spills bond to each other in clumps. Thus, the spill can be easily swept off and discarded.



Application

Supersorb can be used on all hard surfaces for the following spills:

Petrol	Synthetic Oil	Diesel	Solvents
Crude Oil	Cooking Oil	Lubricants	Urine
Food waste	Blood	Human faeces	Animal faeces

Advantages

- Adsorbs variety of spills compared to other adsorbents
- Adsorbs all kind of liquid hydrocarbons
- Reduce the odour of the spill
- Require no secondary detergent wash
- Solvent free
- Spills bond with adsorbent in clumps
- Quick, safe and minimum leaching
- Harmless to human, animals and plants.

Directions

Ensure the source of the spillage is stopped. Surround the spill with Supersorb and then spread the entire spillage with Supersorb evenly. Use a scoop rake or broom and move it back and forth over the spillage until the spillage is completely adsorbed and the surface is dry. It is important to spread enough Supersorb over the spillage in order to get a non slick surface. Sweep off the clump and discard it off. The surface is now clean and dry.

MULTI-SPILL SORBENT

Product Description

Multi-Spill Sorbent is developed by using the technology of high surface area mineral fillers and natural cellulose wood chips. It uses the concept of adsorption and dehydration.

Multi-Spill Sorbent is a superior value product for commercial and household market. It can be applied from smooth to rough hard surfaces. The mixture of chips and fine mineral fillers enable it to adsorb deep inside and outside of the rough surfaces.

Application

Multi-Spill Sorbent can be used on all hard surfaces for the following spills:

Petrol	Synthetic Oil	Diesel	Oil sludge
Crude Oil	Cooking Oil	Paraffin	Vomit
Animal faeces	Thick Sauces	Wet paint	Liquid chemicals



Advantages

- Adsorbs variety of spills compared to other adsorbents
- Adsorbs all kind of oils
- Reduce the odour of the spill
- Solvent free
- Spills bond with adsorbent in clumps
- Quick, safe and minimum leaching
- Harmless to human, animals and plants.

Directions

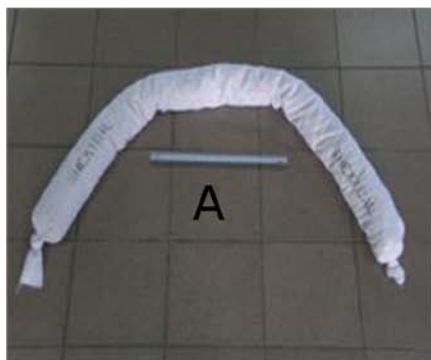
Ensure the source of the spillage is stopped. Surround the spillage with Multi-Spill Sorbent and then spread the entire spillage with Multi-Spill Sorbent evenly. Use a scoop rake or broom and move it back and forth over the spillage until the spillage is completely adsorbed and the surface is dry. It is important to spread enough Multi-Spill Sorbent over the spillage in order to get a non slick surface. Sweep off the clump and discard it off. The surface is now clean and dry.

SPILL ADSORBENTS**Adsorbent Boom**

Diameter = 6 in (152.4 mm)

Length = 10 ft (3048 mm)

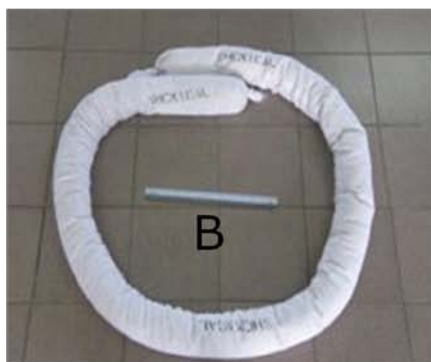
Weight = 3.3 lb (1500 g)

**Adsorbent Socks****Sock A**

Diameter = 3 in (76.2 mm)

Length = 4 ft (1219.2 mm)

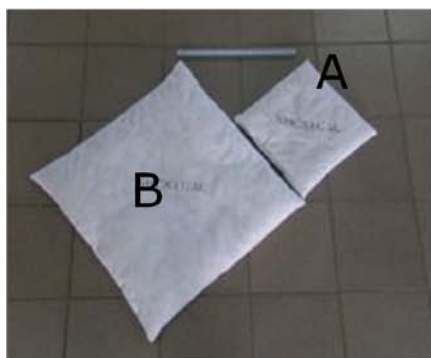
Weight = 0.44 lb (200 g)

**Sock B**

Diameter = 3 in (76.2 mm)

Length = 8 ft (2438.4 mm)

Weight = 0.88 lb (400 g)

**Adsorbent Pillows****Pillow A**

10 in x 10 in (254 mm x 254 mm)

Weight = 0.11 lb (50 g)

Pillow B

20 in x 20 in (508 mm x 508 mm)

Weight = 0.33 lb (150 g)

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