

THE CYTOCLEAN® PROCESS

and the ways of application in
environmental protection



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Terrible Tanker accidents, like EXXON VALDEZ, ERIKA and PRESTIGE are well known as the reason for hardly contamination of the unique Flora and Fauna of the worlds coastlines.

But high-volume Fueloiltanks of bigger getting vessels and the normal work at sea and ashore, threaten the mostly high sensitive habitat of wildlife and plants of the coastal regions daily.

Experts estimate that only in the region of the North-Atlantic and the North- and Baltic-Sea a quantity of 4.000.000 tons of oil per year contaminates the water and shorelines of that area.



All this pollution will harm the biological balance of the environment seriously and create worldwide problems not only Flora and Fauna, but also will affect human life and business in the contaminated areas , for years and decades.



While there is no way to prevent mistakes and accidents, the question is how to ensure that the cleanup is done under the most ecological and economical observation, without increasing contaminations to the environment, such as additional CO² - Emission etc., but also help Flora, Fauna and Human to recover easily after the oil is cleaned up , but also to save costs and to ensure that the oil is still available as a source of energy ?

The CYTOCLEAN® – Process ensures the environment friendly cleanup of oil-spills by being non-toxic and biological degradable. The CYTOCLEAN® – Process will not produce any additional hazardous waste to be disposed or destroyed by additional contamination to the environment and creating extraordinary costs. The CYTOCLEAN® – Process is useable for all kind of surfaces, including wildlife, combats all qualities of mineraloil and allows the recycling of the oil.



The CYTOCLEAN® – Process is non – toxic and biological degradable

CYTOCLEAN® is 100% produced from renewable raw materials, so it will not damage the environment, even when it is overdozed. Regarding its specific producement, it is non-toxic and of non-hazardous declaration. All test results are clearly below the given limits, this makes CYTOCLEAN® also useable for the cleanup of wildlife

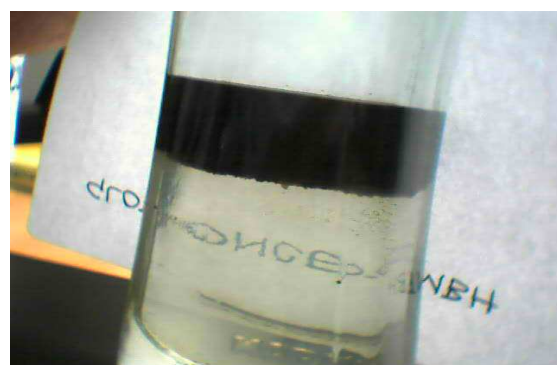


The CYTOCLEAN® – Process is not producing any additional waste.

In difference to the known cleanup procedures, which break the structure of the oil and emulsify it with water, the revolutionary working method of the CYTOCLEAN® – process coats the oil, breaks the adhesion of the oil and separates it from the water, which is only used as „transporter“.

That is the reason why any kind of water can be used to re-mobilize the oil and make it available for recycling. After collecting oil and water, the separation is been done within minutes. The water can be returned into ist normal circle. After cleanup no hazardous waste is left to be destroyed or disposed.

The bottle test shows, that after separation the water is clean enough to read through the bottle.



The CYTOCLEAN® – Process is easy to handle and does not require heavy equipment for the successful use. This makes the CYTOCLEAN® - Process workable under extremely conditions, in unapproachable areas and in many different scenarios and under difficult circumstances.



The CYTOCLEAN® - Process is more effective than all other known procedures and shortens time needed for cleanup to enable Flora and Fauna of the concerned areas to recover as soon as possible after oil contamination

In accordance with all these facts, the CYTOCLEAN® – Process achieves it`s main goal to be a co-action between successful and cost effective cleanup, recycling of the resource oil and protection of the environment to keep it in the balance that is required to keep the world worth living.



Keep our planet healthy - we have nowhere else to go.....

Material safety data sheet in accordance with EC Directive 91/155/EEC

Product and Producer

Product name:

CYTOCLEAN®

Producer:

GLOBAL - CONCEPT GmbH
Gustav-Heinemann - Strasse 22
26919 Brake / Germany

All enquiries to:

Tel.: +49 4401 704090

Fax: +49 4401 704092

Emergency information:

Contact National emergency call number or NPIS via a physician

Composition, Information on Ingredients

Chemical characterization:

Vegetable oil methyl ester with additives, CAS-No.: 73891-99-3

Hazard Identification

Not classified. No currently known hazards. Use according to technical data sheet.

First-Aid Measures

If handled with due care and according to manufacturers application guidelines no special measures are required. In some cases minor effects on health may be expected. Please adopt the following measures:

In case of inhalation: Non-irritating or toxic, however in case of affliction please remove to fresh air as a precaution.

In case of skin contact: May in some cases of high sensitivity cause mild irritation. If afflicted, please wash contact area with soap and water.

In case of eye contact: If irritation occurs, lift eyelid and flush eye immediately with cool fresh water for at least 10 Minutes. Do not rub the affected eye! If irritation persists, or any sign of tissue damage is apparent, consult a physician.

In case of ingestion: Generally not toxic, but as a precaution swill mouth generously with water. Do not induce vomiting. If ingested in conjunction with alcohol or medicines, seek medical advice immediately.

Fire-fighting Measures

Extinguishing media: Foam, dry chemical powder, CO₂, sand or earth.

Measures to be avoided: Do not spray water directly on flames.

Special hazards: Flammable. In case of fire, toxic gases or vapours as well as CO and CO₂ may be formed.

Special fire fighting equipment: Wear suitable protective clothing. Self-contained breathing apparatus is necessary in the danger area if ventilation is poor.

Accidental Release Measures

Personal safety precautions: Avoid prolonged eye or skin contact.

Environmental precautions: Although biodegradable, please prevent spillage into public drainage or local water systems. Prevent further spreading by using sand, earth or other suitable barriers.

General Precautions: Prevent open fire.

Methods for cleaning/removal: In case of excessive spillage bind material with suitable absorbent substrate. Dispose to an approved waste disposal site, observing all local and national regulations.

Handling and Storage

Handling: Avoid prolonged eye or skin contact. Keep away from open fires. Observe general regulations for handling of chemicals.

Storage: Store in dry containers in well ventilated surroundings. Keep containers closed and prevent exposure to direct sunlight and heat sources. Avoid contact with strong oxidizing agents.

Storage classification: VCI - Classification 10

Exposure Control, Personal Protection

Occupational Exposure to Product: No specific exposure time limitation.

Specific equipment required in handling: No special equipment required.

Inhalation protection: No special equipment required.

Eye protection: Generally not required, but advisable when transferring product between storage containers.

Skin protection: Wearing of protective gloves is advised in cases of prolonged contact.

General Precautions: Observe general regulations for handling of chemicals.

Physical and Chemical Properties

Form: Liquid

Colour: Light green to amber

Odour: Weak characteristic odour.

Freezing point: approx. -20 °C

Ignition point: Not known.

Flash point: 180 °C according to DIN 51758 / ISO 2719

Explosion point: Not known.

Boiling point: approx. 300 °C

Cloud point: -8 °C

Pour point: -10 °C

Specific density (20 °C): 0.875 – 0.885 kg/l

Solubility (20 °C): Insoluble in water.

Kinematic viscosity (40 °C): 4.0 mm²/s DIN 51562

Kinematic viscosity (100 °C): 1.7 mm²/s DIN 51562

Stability and Reactivity

Stability: Stable if handled within guidelines and usual good practice.

Special situations to be avoided: None, if handled within guidelines and usual good practice.

Materials to avoid: Avoid contact with strong acids, bases or oxidizing agents.

Hazardous decomposition products: None, if handled within guidelines and usual good practice.

Toxicological Information

Toxicity: LD₅₀ (oral, rat) > 2000 mg/kg body weight.

Toxicological Data:

Inhalation: May cause headache and dizziness if handled inappropriately.

Eye irritation: Non irritating (Rabbit, OECD-Method 405)

Skin sensitisation: None known.

Skin irritation: Non irritating (Rabbit, OECD-Method 404)

General remarks: Prolonged and intensive exposure to the skin may cause degreasing, dry skin and in the case of extremely sensitive persons lead to dermatitis.

Ecological information

Information for all components:

Aquatic toxicity:

Fish toxicity: Acute, LC₅₀ > 100 mg/l

Bacteria toxicity: Acute, EC₅₀ > 100 mg/l

Biotic degradation: Product components are classed easily biodegradable (OECD A-F test results at least 60% BSB/CSB or 70% DOC degradability within 28 days).

Half-life time biodegradation in seawater is expected within 4 days (EPA standard biodegradation assessment), with bio-degradation to water and CO₂ components completed within 28 days.

Disposal Information

Comply with local regulation for waste disposal to an approved waste disposal site, observing all local and national regulations. Spent or unused remnants of the product are not to be disposed of via the sewerage system. Consign empty container to normal waste.

Transport Information

Non-dangerous or hazardous cargo (in accordance with RID/ADR, GVS/GGVE, ADNR, IMDG, ICAO-TI/IATA-DGR).

Regulatory Information

Classification and labelling in accordance with EC regulations for dangerous and hazardous cargos:

Labelling: not necessary

Risk phrases: N/A

Safety phrases: N/A

Water pollution class: WGK 1

Additional Information

The above information is based on the present state of our knowledge of the product at the time of publication.

The information is given in good faith; no warranty is implied with respect to the quality or the specification of the product. The product is of natural origin and may vary in its properties within given tolerances. The user must satisfy himself that the product is entirely suitable for the purpose. The information contained in this safety data sheet does not in itself constitute a workplace risk assessment as may be required to be carried out under COSHH Regulations.