

THE CYTOCLEAN® PROCESS

and the several ways of application in environment, shoretanks and shipping Industry



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Environmental protection and cost saving at same time

How to row the bow between significant cost saving and environmental friendly combat of oil contaminations !

Global Concept GmbH (www.global-concept.org) a German company, that is working in the area of environmental friendly cleanup of oiled surfaces, ships- and shore-tanks as well as oil-spills, has developed the CYTOCLEAN® - process.

The CYTOCLEAN®-process is able to clean oiled surfaces, even Plants and Wildlife in a biological and non-toxic way, that allows Flora and Fauna to recover easily after they have been contaminated by mineral-oil.

After the oiled surfaces are cleaned by the CYTOCLEAN®-process, no residues will remain to be disposed at the dumping ground or burned as dangerous and extraordinary burden for the worlds climate.

The CYTOCLEAN® - process can be used for any kind of mineral oil and is tested and approved by United States EPA and Norwegian SINTEF.

CYTOCLEAN® has been official nominated for the GREEN SHIP TECHNOLOGY AWARD 2009, due to its impressive results in cleanup of oiled ships-tanks during voyage.

But also for the cleanup of shore-tank facilities and any kind of oiled equipment the CYTOCLEAN® - process is the best possible way for an environmental friendly and competitive cleanup.

How is the CYTOCLEAN® - process working ?

CYTOCLEAN® is a biological and non-toxic product, that does not harm the environment, and is biological easy declinable with a half-life time of only 96 hours.

CYTOCLEAN® is not going to touch the structure of the contaminated surface. This is the reason why CYTOCLEAN® is able to cleanup wildlife with none impact or irritation to their skin.

CYTOCLEAN® does not touch or change the structure of the oil by cracking - like chemicals do – nor making it available for water.



CYTOCLEAN® has to be sprayed undiluted onto the oiled surface. After a short residence time CYTOCLEAN® coats the oil and isolates it from the surface. Now the oil will be

removed with any kind of water. Water and oil will be collected and already after a short time been exactly separated.



Now the water is been returned into its "regular circle" or re-used for the next cleansing circle without any further treatment required , because it does not content any oil.

The oil is re-used in its primarily intended use, without any additional treatment required.



The oiled surface remains absolutely clean, after a single application.

Conclusion:

In times of high energy costs, ever increasing pollution of the environment and rising costs of hazardous waste disposal – the CYTOCLEAN® - process ensures a impressive and convincing way to cleanup ships tanks, shore tanks and any oiled surface in an environmental friendly and competitive way.



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General Information for use of CYTOCLEAN® (Attachment to Safety Data Sheet)

General Information

CYTOCLEAN® is to combat all Types (1 – 4) of mineral-oil (Gasoil to Bunker C)

Please kindly attend also the product discription on the Safety Data Sheet.
Please inform yourself from the Safety-Data-Sheet about actions to be taken in emergency circumstances.

In case of any doubt or question in specific handling, please do not hesitate to contact us.

Conditions for Use

The following application fields are appropriate for the use of CYTOCLEAN®.

Shoretanks, Shipstanks, Pipelines and oiled equipment, that has to be cleaned and/ or prepared for cold or “hot” work (gasfree – certification).

Coarse sand beaches, where petroleum has penetrated into sand

Marsh areas and vegetated Wetlands, where oil has coated plants and become trapped.

Concrete bulkheads, rip-rap and piers, that may have trapped oils
best regards

Oiled pilings, gravel or cobble shorelines and rocky shores, where oil has become trapped in pockets

Public beaches, fisheries, hatcheries, river banks and other sensitive or high impact sites

The CYTOCEAN®-Process has been field tested successfully for removing oil from mussel-beds and inter-tidal zones, pilings and concrete rip-raps

The CYTOCLEAN®-Process also proved effective in facilitating the removal of oil from the banks and vegetation along an oiled creek.

Recommended Application Procedure

Application method:

The CYTOCLEAN®-Process is most suitable for the treatment of heavily oiled areas that do not respond well to conventional treatments, or are considered too sensitive for mechanical / pressure wash strategies.

CYTOCLEAN® is applied to oiled areas to extract and recover weathered petroleum by flotation with passive water deluges from header pipes or manual spraying.

In some scenarios, when CYTOCLEAN® is applied, collection booms, oil skimmers, sorbent pads, or other appropriate containment and collection mechanisms must be deployed and operational.

Concentration / Application Rate:

CYTOCLEAN® is to be used only neat and undiluted, for direct application to spilled oil.

CYTOCLEAN® may be applied with a variety of spraying or washing equipment, depending upon the scale and type of the shoreline to be cleaned. For large beach areas, CYTOCLEAN® can be sprayed from water trucks or work boats equipped with pumps, hoses and nozzles to deliver CYTOCLEAN® as an aerial spray. In smaller applications, CYTOCLEAN® may be applied with hand sprayers or portable pumps to spray CYTOCLEAN® directly onto oiled surfaces.

Dose rates will vary with the type and amount of petroleum spilled, the extent of weathering, and other site specific conditions, including temperature, porosity of shoreline, and residence time available to let CYTOCLEAN® contact the oil.

The quantity of CYTOCLEAN® applied should be approximately equivalent to the quantity of petroleum accumulated, or as required to dissolve and remove weathered oil.

After application, CYTOCLEAN® should be allowed to penetrate and dissolve the weathered oil for at least 1 hour, preferably longer. Cold weather applications will require more contact time before initiating recovery. In tidal areas, it is advisable to apply CYTOCLEAN® as the tide is ebbing (receding) to maximize contact time. Trapped oil may continue for several days, requiring that containment devices be left in place.

Shelf Life/ Storage

Shelf Life:

When stored in closed container in a dry environment, the shelf-life of CYTOCLEAN® is minimum of 10 years.

When stored in open containers and in a warm, humid environment, the shelf-life of CYTOCLEAN® will decrease to 1 year.

CYTOCLEAN® does not deteriorate appreciably over time, but will grow bacteria if water condensation accumulates in the container.

Storage:

CYTOCLEAN® should be stored in airtight containers, if possible, without excessive exposure to moisture, at temperatures between 39°F and 110°F.

Avoid direct sun / uv-radiance and freezing.

At temperatures below cloud point (43°F), CYTOCLEAN® may become cloudy, but will return to normal upon warming, with no effect on performance.

Chemisch-Technisches Laboratorium Luers KG

Michael Espitalier
geschäftsführender Gesellschafter

Öffentlich bestellter und vereidigter Sachverständiger für
Kraftstoffe und Mineralölprodukte, Brauch- und Abwasser

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Die Sparkasse Bremen
Kto.-Nr. 115 4046
(BLZ 290 501 01)

Ihre Zeichen

Ihre Nachricht vom

Datum: 09.06.2009 e-p

Analysenbericht

Probeneingang : 14.04.2009
Labor-Nr. : 091696, 091697
Probenart : Öl
Probenherkunft : Heeling Tank M/V "S. I."

vor Anwendung
Cytoclean®

nach Anwendung
Cytoclean®

Untersuchung
Ölphase (50 %)

Viskosität bei 50 °C DIN 51366	cSt	749	9,95
Dichte bei 15 °C EN ISO 12185	g/l	1.010	821,4
Wasser DIN EN ISO 12937	%	7,75	0,16
Schwefel DIN 51577/IC	%	4,3	1,7
unterer Heizwert DIN 51900 (Ho x Faktor 0,94)	MJ/l	39,1	37,3
H- Wert umgerechnet	MJ/kg	38,7	45,4
			Untersuchung Wasserphase (50 %)
Ölgehalt DIN EN ISO 9377-2	mg/l		0,2 ppm

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Ihre Zeichen

Ihre Nachricht vom

Datum: 08.07.2008 e-p

Analysenbericht

Probeneingang : 04.07.2008
Labor-Nr. : 083354, 083355
Probenart : Öl
Probenherkunft : MV "BEL. RES."

		before treatment with CYTOSOL	after treatment with CYTOSOL
Viskosität bei 50 °C DIN 51366	cSt	364	3,33
Dichte bei 15 °C EN ISO 12185	g/l	984,3	891,0
Wasser DIN EN ISO 12937	%	0,17	0,16
Schwefel DIN EN ISO 20846	mg/kg	3,1	0,2

~~Chemisch-Technisches Laboratorium Luers KG~~

