

Successfully fighting oil spills!



Our patented solution will help you to react quickly to oil spills while reducing the costs of a recovery operation

Oil Spill - Costs

Every oil spill is attached to huge costs:

- 1) Financial losses due to lost revenue
- 2) Economic costs of recovery and clean up
- 3) Environmental impact and incalculable ecological costs

With MultiSorb you can reduce the costs on all three levels:

- 1) Recover lost revenue
- 2) Reduce cleaning costs
- 3) No long term environmental impact



Oil Spill - Recovery

After a oil spill happened, the disaster recovery is key and specialist teams are racing against time to recover or disperse the crude oil.

This list shows the common methods:

Method	Description	Pro	Contra
Bioremediation	Use of bacteria or bio agents	Non-toxic	Speed of recovery
Controlled burning	-	Quick reduction of oil volume	Air pollution, can only be done in low winds
Dispersants	Chemical substance used to disperse oil slicks	Quick dissolution and dilution fo large oil slicks	Highly toxic for the environment
Solidifying	Using polymers to bind the oil and recover it for later destruction	Relatively non-toxic and easy removal of the oil	Toxic waste disposal (solidified crude oil)

Oil Spill - Recovery

Our new solution, MultiSorb, has the benefits of the solidifying method but introduces additional, huge benefits.

Method	Description	Pro	Contra
Solidifying	Using polymers to bind the oil and recover it for later destruction	Relatively non-toxic and easy removal of the oil	Toxic waste disposal (solidified crude oil)

- No toxic waste disposal necessary
- Using large centrifuges, the binding agent and the crude oil can be separated
- The crude oil can be re-sold, the binding agent re-used

Oil binding agent - Product description

- The solution is a patented oil binding agent that is composed of renewable raw materials
- A key advantage of the presented solution is the reusability
 - By use of a centrifuge, the oil and the binding agent can be separated again
 - The oil can be returned to the intended use, thus generating additional revenue
 - The binding agent can be re-used multiple times
- 1KG of the binding agent can treat up to 10 liters of oil
- MultiSorb key success factors:
 - non-toxic
 - floatable
 - highly absorbant
 - re-usable
 - made of renewable raw materials

Oil binding agent – Product description

- Patented solution (Patent No. DE102013008845; DE19954643)

(19)  Deutsches
Patent- und Markenamt



(10) **DE 10 2013 008 845 A1** 2014.11.27

(12)

Offenlegungsschrift

(21) Aktenzeichen: **10 2013 008 845.3**

(22) Anmeldetag: **24.05.2013**

(43) Offenlegungstag: **27.11.2014**

(51) Int Cl.: **C09K 3/32 (2006.01)**

(71) Anmelder:

**ASA Spezialenzyme GmbH, 38124 Braunschweig,
DE; Kreuder, Gerhard, 38275 Haverlah, DE**

(74) Vertreter:

Cordes, Arno, Dr., 38302 Wolfenbüttel, DE

(72) Erfinder:

**Cordes, Arno, Dr., 38239 Salzgitter, DE; Kreuder,
Gerhard, 38275 Haverlah, DE**

(56) Ermittelter Stand der Technik:

**DE 199 54 643 A1
JP 2005- 211 786 A**

JP 2005211786 A Computerübersetzung

Prüfungsantrag gemäß § 44 PatG ist gestellt.

Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

(54) Bezeichnung: **Biotechnische Modifizierung von Partikeln aus nachwachsenden Rohstoffen zur Verbesserung der Aggregation und Schwimmfähigkeit auf wässrigen Oberflächen**

Oil binding agent – Product description

- Environmental safety approved by German laboratories

Certificate of Health



Certificate of Health

Product name	green MultiSorb
Description:	oil binding agent; granulate
Origin:	renewable primary products
Producer:	The Green day Walbaumstr. 11 D-38275 Haverlah Germany
Order no.:	9130
Lot no.:	9130.08

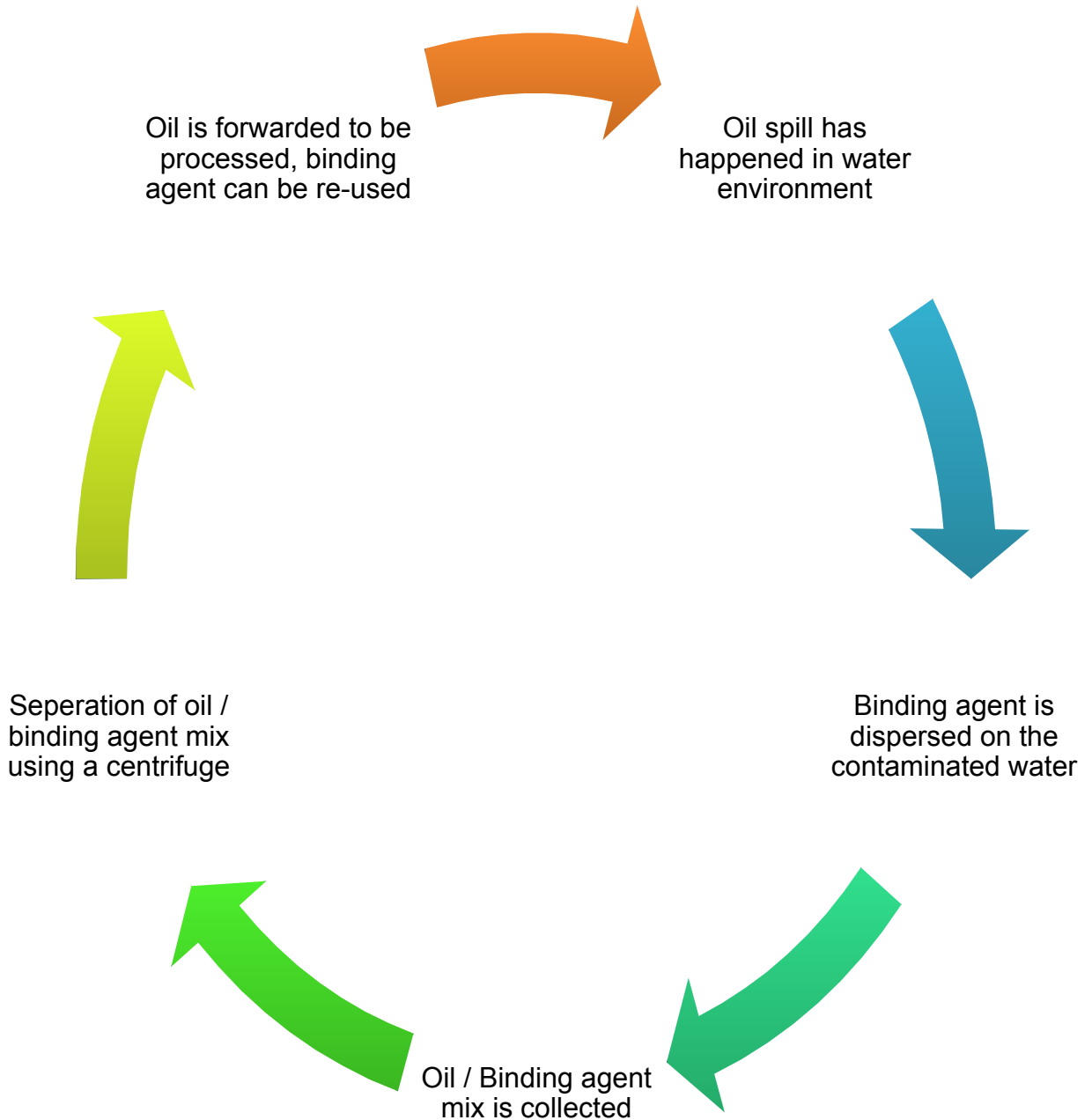
After examination of all documents concerning the quality of the above-mentioned product batch we herewith confirm, that the product **green MultiSorb, lot no. 9130.08** contains no ingredients, that are toxic or harmful to humans, animals or plants.

Wolfenbüttel/GERMANY, 04.08.2015

ASA Spezialenzyme GmbH
Quality Control
Dr. Arno Cordes
Managing Director

ASA Spezialenzyme GmbH
D-38302 Wolfenbüttel
Tel.: +49 (0) 5331 88 25-30 • Fax: (0) 5331 88 25-32
e-mail: service@asa-enzyme.de
Internet: www.asa-enzyme.de

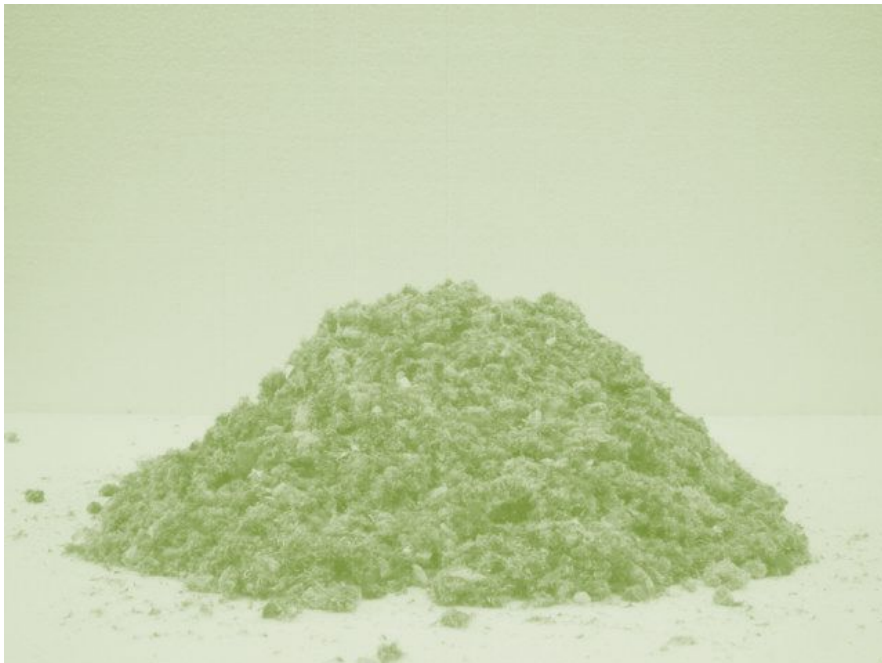
The recycling cycle of MultiSorb - Demonstration



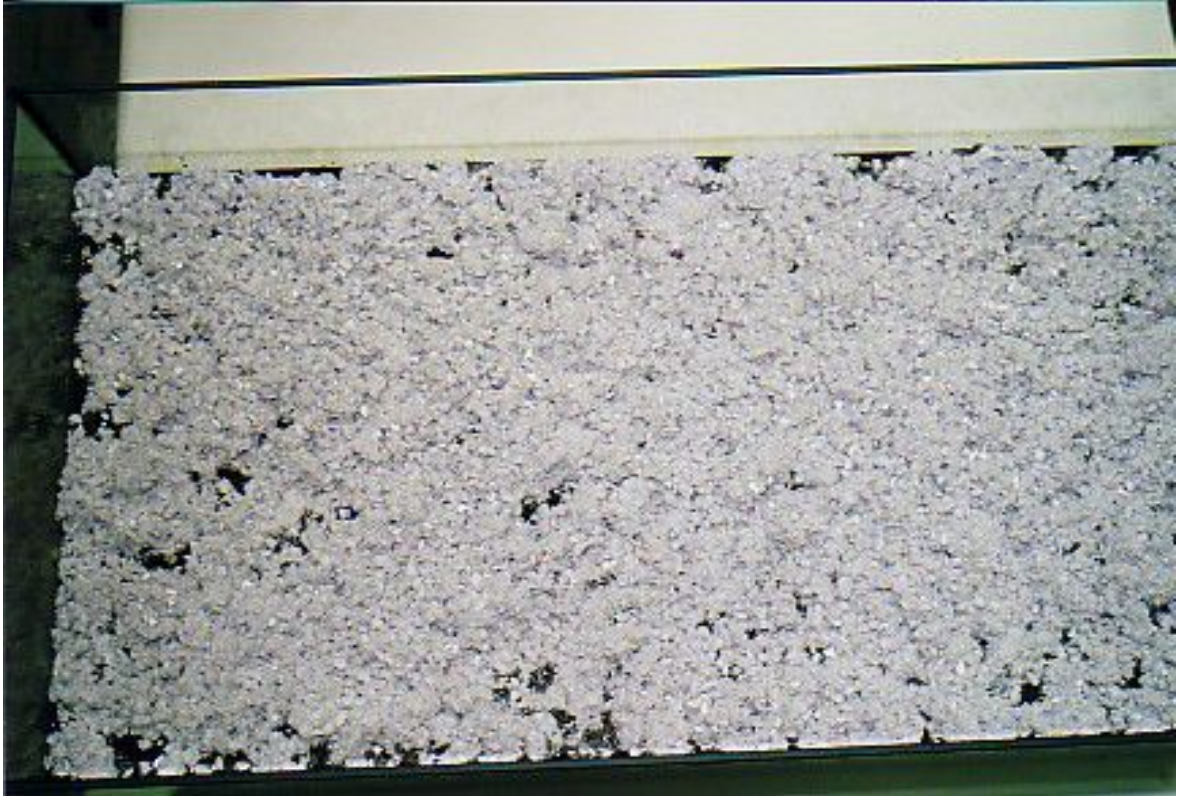
The recycling cycle of MultiSorb - Demonstration



**Step 1: Oil spill and the binding agent
MultiSorb**



The recycling cycle of MultiSorb - Demonstration

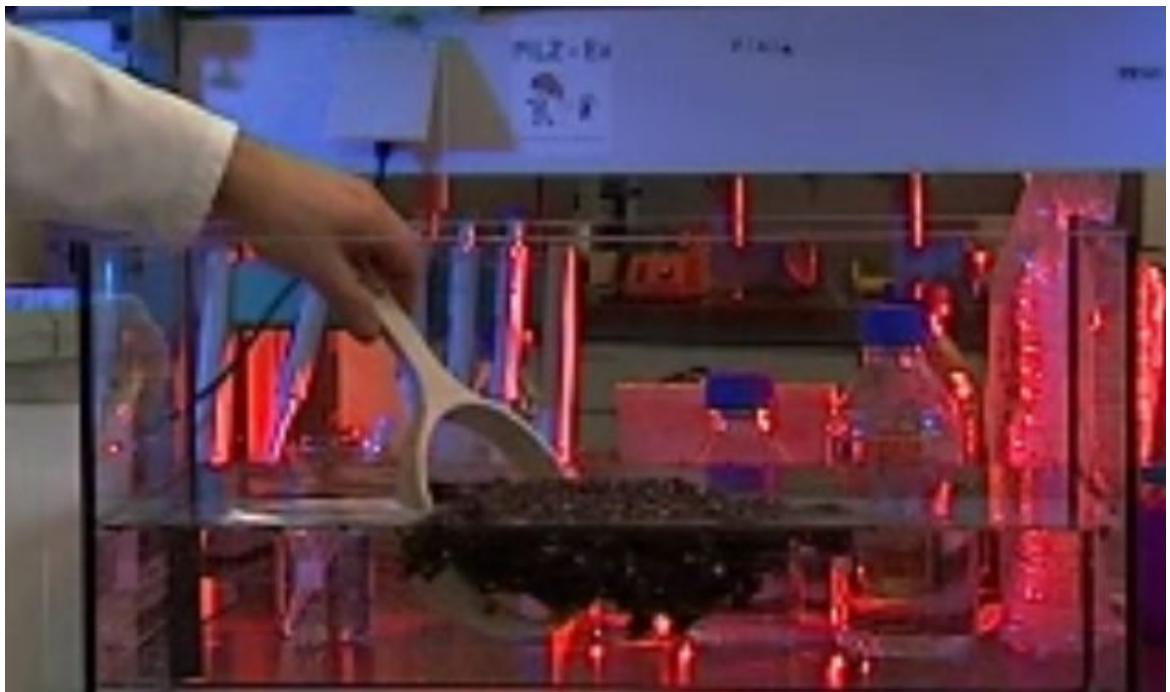


**Step 2: The binding agent is dispersed
on the contaminated water**

The recycling cycle of MultiSorb - Demonstration



Step 3: Oil / binding agent mix is collected



The recycling cycle of MultiSorb - Demonstration



Step 4: Oil / binding agent mix put into a centrifuge and oil is recovered



Oil binding agent - Large scale use case

- Part 1: dispersing the binding agent over a large area using water planes
- Part 2: Collecting the oil with the binding agent using ships
- Part 3: separating the oil and the binding agent directly on the ships using centrifuges
- Part 4: transferring the oil to a tanker and returning the binding agent to the operations base



Oil binding agent – Product offer

- The MultiSorb solution is a revolutionary product that
 - reduces the recovery costs significantly
 - is made of renewable raw materials, lowering the impact on the environment
 - is non-toxic
 - enables a recovery of the spilled oil
- MultiSorb has been invented by Gerhard Michael Kreuder. He holds several patents in the recycling industry and has been working on a solution for an oil binding agent for over 10 years.
- Envoprotect UG is the exclusive sales & marketing partner for MultiSorb

Oil binding agent – Contact

Envoprotect UG

Antoine Adéyika Bankoley (Managing Director)

Tel: +49-4461-700301

Mob.: +49-176-78115522

Email: antoine.bankoley@envoprotect.de