DEKRA Automobil GmbH Handwerkstr. 15 D-70565 Stuttgart

Diamix Europe GmbH
Hubenkamp 1
29614 Soltau

DEKRA Automobil GmbH
Laboratory for Environmental & Product Analysis
Handwerkstr. 15
70565 Stuttgart
Tel.
Fax

Contact:

Telephone
E-mail
Date 08.08.2018

Test Report No.: 55260971-3

Examination of an Oil Sorbent according to DWA-A 716-1 & 716-9

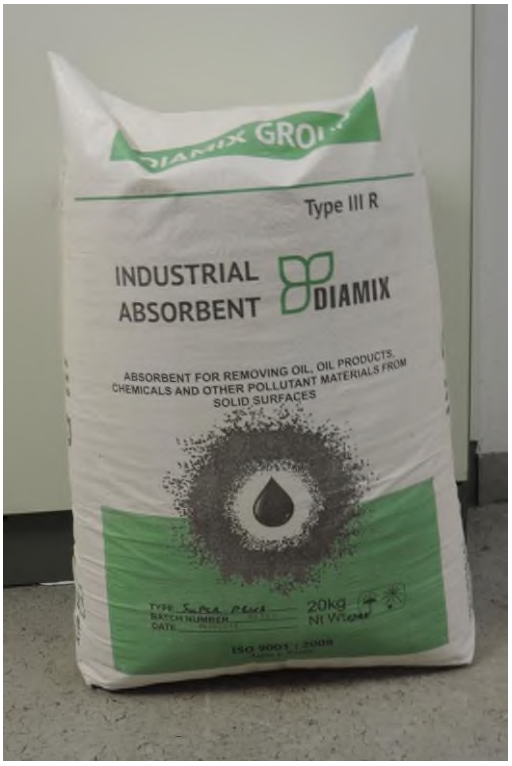
Client:	Diamix Europe GmbH Hubenkamp 1 29614 Soltau
Date of order:	Jun 22, 2018
Sample received:	Jun 26, 2018
Sample designation:	Diamix Super Plus (Raw material: Kieselguhr)
Testing Period::	26.06.2018 - 07.08.2018

Test Result:

- following pages -

Accredited Analytical Laboratory D-PL-11060-03-00 in Stuttgart and Halle (Saale)

Sample No.:	55260971003
Sample designation:	Diamix Super Plus
Sample description:	Oil sorbent



Oil sorbent “Super Plus” from Diamix Group.

1. General Requirements according to “Arbeitsblatt DWA-A 716-1”

1.1 General-Safety Considerations

The examined oil sorbent consists of kieselguhr that is not classified as a hazardous substance. Under usual storage conditions, no decomposition or auto-ignition is expected

1.2 Occupational-Health Assessment

Aqueous solutions of the oil sorbent show a pH of 5.8 (weak acidic). Resulting, dermal contact is possible without hesitation. Dust characteristics of the oil sorbent are not a matter of concern, nevertheless, long-term exposition has to be prevented.

1.3 Environmental-Impact Assessment

Results of the eluate examination are attached as appendix to this test report. It was ascertained that the oil sorbent does comply with all limits of the German “Deponieverordnung”.

2 Specific Requirements according to DWA-A 716-9

2.1 Bulk Density according to DWA-A 716-9: 4.2

Parameter	Unit	Result
Bulk density	g/L or kg/m^3	480

2.2 Grain-Size Distribution according to DWA-A 716-9: 4.3

Parameter	Unit	Result
Coarse grain > 4 mm	% (w/w)	0.2
4 mm - 0,5 mm	% (w/w)	52.4
0.5 mm – 0.125 mm	% (w/w)	47.0
Fine grain < 0.125 mm	% (w/w)	0.4

Fine grain < 0.125 mm is 0.4% (w/w) and therefore, this value has to be printed on the packing.

2.3 Absorption Capacity in a Westinghouse Sieve and Holding Capacity according to DWA-A 716-9: 4.4

2.3.1 Absorption Capacity of Water

Parameter	Unit	Result
R_w*	% (w/w)	154
R_w*	% (v/v)	74

**Water absorption after 30 min.*

2.3.1 Absorption Capacity of Water

Parameter	Unit	Result
R_h*	% (w/w)	111
R_h*	% (v/v)	65

**Oil absorption after 30 min.*

2.3.3 Oil-Holding Capacity

Parameter	Unit	Result
R_{h24}*	% (w/w)	101
R_{h24}*	% (v/v)	60

** Oil-holding capacity after 24 h.*

2.4 Oil-Holding Capacity under Pressure according to DWA-A 716-9: 4.5

Parameter	Unit	Result
Excess needed under pressure	% (v/v)	47

Final results:

Required amount of oil-binding agent is 200% (v/v). The limit is 350% (v/v).

1 L oil-binding agent binds 0.50 L oil

1 kg oil-binding agent binds 0.85 kg oil

1 kg oil-binding agent binds 1.04 L oil

2.5 Variation of Slip Resistance (SRT Test) according to DWA-A 716-9: 4.6

Parameter	Unit	Result
Change in SRT value*	%	0

**Maximum change in SRT value: 15% without purification by surfactants.*

3 Labeling and Packing

Packing design and labeling has to be carried out according to DWA-A 716-9: 5.

4. Conclusion

The oil sorbent “Diamix Super Plus” does comply with all criteria of DWA-A 716-1 (July 2011) and DWA-A 716-9 (December 2014) for the group “R”.

The positive test result leads to an entry in the German list “Liste der geprüften Ölbindemittel”.

The entry is limited until 08.08.2023 and can be extended according to DWA-A 716-1 by request.

Material Eluate:

Parameter	Unit	Sample	Limits	
			DK* I / W	DK* II / R
pH** (25°C)	-	6.3	5,5 – 13	5,5 – 13
DOC	mg/L	1.6	≤ 50	≤ 80
Phenol Index	mg/L	< 0.01	≤ 0,2	≤ 50
Arsenic	mg/L	0.035	≤ 0,2	≤ 0,2
Lead	mg/L	< 0.001	≤ 0,2	≤ 1
Cadmium	mg/L	0.0002	≤ 0,05	≤ 0,1
Copper	mg/L	< 0.001	≤ 1	≤ 5
Nickel	mg/L	< 0.001	≤ 0,2	≤ 1
Mercury	mg/L	< 0.00001	≤ 0,005	≤ 0,02
Zinc	mg/L	< 0.005	≤ 2	≤ 5
Chloride	mg/L	< 5	≤ 1500	≤ 1500
Sulfate	mg/L	< 5	≤ 2000	≤ 2000
Cyanide, lfs.	mg/L	< 0.01	≤ 0,1	≤ 0,5
Fluoride	mg/L	1.00	≤ 5	≤ 15
Barium	mg/L	< 0.005	≤ 5	≤ 10
Chromium	mg/L	0.025	≤ 0,3	≤ 1
Molybdenum	mg/L	0.237	≤ 0,3	≤ 1
Antimony	mg/L	0.005	≤ 0,03	≤ 0,07
Selenium	mg/L	< 0.001	≤ 0,03	≤ 0,05
Total amount of dissolved material	mg/L	50	≤ 3000	≤ 6000

**DK = "Deponieklasse"*
***Limit for oil-bindings agents: pH 4 - 11*