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Date Apr 15, 2024

Test Report

Order No.: **55281735**

Test Report No.: **PB2446066**

Version 1

Client:	Imerys Industrial Minerals Denmark A/S Ms. Agnieszka Chatzidimitrakis Konsborgvej 9 7884 FUR DENMARK
Date of order:	Mar 11, 2024
Sampled by:	Customer
Sample received:	Mar 11, 2024
Sample designation:	ABSODAN SUPER PLUS -10K (Raw material: Diatomaceous earth, calcined)
Scope of investigation:	Examination of an Oil Sorbent according to DWA-A 716-1 & 716-9
Project:	PO: 8700060438
Testing period:	Mar 11, 2024 - Apr 15, 2024

Test result:

- see following pages -

Probe-Nr.:	55280769001
Sample designation:	ABSODAN SUPER PLUS -10K
Sample description:	Oil sorbent
Picture of the sample:	 

LQ: Limit of quantification LD: Limit of detection

Worked out: DEKRA Automobil GmbH – Handwerkstr. 17 – 70565 Stuttgart
Person in charge: Daniela Schlosser Phone 0711/ 7861-3552

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

1.1 General-Safety Considerations

The examined oil sorbent consists of Diatomaceous earth (calcined) 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 7.6. Resulting, dermal contact is possible. 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 complies with all limits of the German “Deponieverordnung, Deponieklasse II”.

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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	590

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

Parameter	Unit	Result
Coarse grain > 4 mm	% (w/w)	0.0
4 mm – 2 mm	% (w/w)	0.01
2 mm - 0,5 mm	% (w/w)	38.22
0.5 mm – 0.125 mm	% (w/w)	61.07
Fine grain < 0.125 mm	% (w/w)	0.69

Fine grain < 0.125 mm is 0.69 % (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)	118
R_w*	% (v/v)	69

**Water absorption after 30 min.*

2.3.1 Absorption Capacity of Oil

Parameter	Unit	Result
R_h*	% (w/w)	95
R_h*	% (v/v)	68

**Oil absorption after 30 min.*

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2.3.3 Oil-Holding Capacity

Parameter	Unit	Result
R_{h24}*	% (w/w)	87
R_{h24}*	% (v/v)	62

** 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)	39.4

Final results:

Required amount of oil-binding agent is 185 % (v/v). The limit is 350% (v/v).

1 L oil-binding agent binds 0.54 L oil

1 kg oil-binding agent binds 0.75 kg oil

1 kg oil-binding agent binds 0.92 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*	%	1

**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 “ABSODAN SUPER PLUS -10K” 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 15.04.2029 and can be extended according to DWA-A 716-1 by request.

Remarks:

The test results refer exclusively to the samples specified. The decision rule for the evaluation of conformity of test results can be found at
https://www.dekra.de/media/entscheidungsregel-bewertung-konformitaet-pruefergebnise-d-v3-pdf-pdf.pdf
https://www.dekra.de/media/entscheidungsregel-bewertung-konformitaet-pruefergebnise-gb-v3-pdf.pdf
A reproduction in excerpts of the test report must not be made without the written consent of the test laboratory. Chemical and material blanks are taken into account when determining the results. Samples will be stored for max. 6 months (for exceptions and specific storage times see QMH).

Declaration:
a = accredited test method, n = not accredited test method,
Pa = Analysis carried out by partner laboratory (accredited test method), Pn = Analysis carried out by partner laboratory (not accredited test method),
Ha = Analysis carried out by DEKRA lab Halle (accredited test method), Hn = Analysis carried out by DEKRA lab Halle (not accredited test method),
SBa = Analysis carried out by DEKRA lab Saarbrücken (accredited test method), SBn = Analysis carried out by DEKRA lab Saarbrücken (not accredited test method),
Ba = Analysis carried out by DEKRA lab Bretten (accredited test method), Bn = Analysis carried out by DEKRA lab Bretten (not accredited test method)

Stuttgart, Apr 15, 2024

DEKRA Automobil GmbH
Laboratory for Environmental and Product Analysis

Daniela Schlosser
Projektleiterin KFZ-Betriebsstoffe und Gefahrgutprüfung

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Material Eluate:

Parameter	Unit	Sample	Limits	
			DK* I / W	DK* II / R
pH** (25°C)	-	7.6	5,5 – 13	5,5 – 13
DOC	mg/L	1.4	≤ 50	≤ 80
Phenol Index	mg/L	< 0.01	≤ 0,2	≤ 50
Arsenic	mg/L	0.13	≤ 0,2	≤ 0,2
Lead	mg/L	< 0.01	≤ 0,2	≤ 1
Cadmium	mg/L	< 0.001	≤ 0,05	≤ 0,1
Copper	mg/L	< 0.01	≤ 1	≤ 5
Nickel	mg/L	< 0.01	≤ 0,2	≤ 1
Mercury	mg/L	< 0.0005	≤ 0,005	≤ 0,02
Zinc	mg/L	< 0.01	≤ 2	≤ 5
Chloride	mg/L	15	≤ 1500	≤ 1500
Sulfate	mg/L	470	≤ 2000	≤ 2000
Cyanide, lfs.	mg/L	< 0.01	≤ 0,1	≤ 0,5
Fluoride	mg/L	0.82	≤ 5	≤ 15
Barium	mg/L	0.021	≤ 5	≤ 10
Chromium	mg/L	< 0.01	≤ 0,3	≤ 1
Molybdenum	mg/L	0.55	≤ 0,3	≤ 1
Antimony	mg/L	< 0.005	≤ 0,03	≤ 0,07
Selenium	mg/L	< 0.01	≤ 0,03	≤ 0,05
Total amount of dissolved material	mg/L	770	≤ 3000	≤ 6000

**DK = "Deponieklasse"; DK I: W-Oil sorbents; DK II: R- Oil sorbents*
***Limit for oil-bindings agents: pH 4 – 11*

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Parameter list : Eluate

Parameter	Methods	Limit of quantification
Eluate preparation	DIN EN 12457-4:2003-01 (Ha)	-
pH-value (@ 25°C)	DIN EN ISO 10523 (C 5):2012-04 (Ha)	-
DOC	DIN EN 1484 (H 3):2019-04 (Ha)	0,1 mg/l
Phenol-Index	DIN 38409-16:1984-06 (Ha)	0,01 mg/l
Arsenic	DIN EN ISO 17294-2 (E 29):2017-01 (Ha)	0,01 mg/l
Lead	DIN EN ISO 17294-2 (E 29):2017-01 (Ha)	0,01 mg/l
Cadmium	DIN EN ISO 17294-2 (E 29):2017-01 (Ha)	0,001 mg/l
Copper	DIN EN ISO 17294-2 (E 29):2017-01 (Ha)	0,01 mg/l
Nickel	DIN EN ISO 17294-2 (E 29):2017-01 (Ha)	0,01 mg/l
Mercury	DIN EN ISO 12846 (E 12):2012-08 (Ha)	0,0005 mg/l
Zinc	DIN EN ISO 17294-2 (E 29):2017-01 (Ha)	0,01 mg/l
Chloride	DIN EN ISO 10304-1 (D 20):2009-07 (Ha)	0,1 mg/l
Sulfate	DIN EN ISO 10304-1 (D 20):2009-07 (Ha)	0,1 mg/l
Cyanide	DIN 38405-D 13:2011-04 (Ha)	0,01 mg/l
Fluoride	DIN EN ISO 10304-1 (D 20):2009-07 (Ha)	0,1 mg/l
Barium	DIN EN ISO 17294-2 (E 29):2017-01 (Ha)	0,01 mg/l
Chromium	DIN EN ISO 17294-2 (E 29):2017-01 (Ha)	0,01 mg/l
Molybdenum	DIN EN ISO 17294-2 (E 29):2017-01 (Ha)	0,01 mg/l
Antimony	DIN EN ISO 17294-2 (E 29):2017-01 (Ha)	0,005 mg/l
Selenium	DIN EN ISO 17294-2 (E 29):2017-01 (Ha)	0,01 mg/l
Total amount of dissolved material	DIN 38409-1:1987-01 (Ha)	100 mg/l

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