



AVISTA OIL

Redefining **Rerefining**

USED OIL ACCEPTANCE CRITERIA

General used oil acceptance criteria
& Laboratory services
AVISTA OIL Deutschland GmbH



GENERAL INFORMATION

The refinery AVISTA OIL Deutschland GmbH owns the permissions to accept used oils, in accordance with the Ordinance on Waste Oils (Altölverordnung), liquid waste, in accordance with the PCB/PCT Waste Ordinance (PCB/PCT Abfallverordnung), and other liquid waste.

AVISTA OIL Deutschland GmbH is certificated in accordance with the Ordinance on Specialised Waste Management Companies (EfbV). The exemption number in accordance with § 13 NachwV is: FRC9802Z0007

Authority	License type	License number	Validity since
RP Lüneburg	GeWo	VG2(17)32-03 Nr. 12	17.08.1965
Bezirksregierung Hannover	BlmSchG*	204-40211/27	21.08.1978
Bezirksregierung Hannover	BlmSchG	504a-40500/4/4.4	11.07.1996
Bezirksregierung Hannover	BlmSchG	501.7-40500/4/4.4	14.12.2001

Process in accordance with Annex II B of the Krw-/AbfG*: R3, R9 The disposal processing number is: C 1 D 0 0 0 0 0 0

Authority	License type	License number	Validity since
Bezirksregierung Hannover	Krw-/AbfG	502f-62811-S-3-3	13.04.1988
Bezirksregierung Hannover	BlmSchG	204a-40500/4/4.4	24.08.1992
Bezirksregierung Hannover	BlmSchG	504a-40500/4/4.4	06.02.1997

Process in accordance with Annex II B of the Krw-/AbfG*: R1, R3 The disposal number is: C 8 K 0 0 0 0 0 0

We would like to point out explicitly that the Ordinance on Waste Oils prohibits to mix up waste oils which are suitable for regeneration (collection category 1) with waste oils of other collection categories! It is not enough just to confirm that waste oil of this collection category is to be reprocessed. According to the Ordinance on Waste Oils, it is absolutely obligatory for these waste oils to be added for processing base oils!

For waste oils of collection categories 2 to 4 in accordance with the Ordinance on Waste Oils which are delivered to AVISTA OIL Deutschland GmbH for processing, we confirm that they may be mixed as described below at the site where they accumulate received.

This confirmation only applies to processing within the refinery.

(*Note: BlmSchG = Federal Immission Control Act; Krw-/AbfG = Commercial and Industrial Waste Management Act; NachwV = Regulation for accountability; AltöIV = Ordinance on Used Oil)



Collection Category 1:

Waste oils for reprocessing to base oils
 (corresponding to types A/B of the internal classification)

- max. 20 mg/kg PCB (DIN EN 12766-1,2), max. 0.2 % total halogen in the organic phase (oil phase), in accordance with §3 in connection with Annex II of the AltöV

Used oils, which can be mixed with each other:

	<u>EWC code:</u>
mineral based non-chlorinated hydraulic oils	13 01 10
mineral-based non-chlorinated engine, gear and lubricating oils	13 02 05
synthetic engine, gear and lubricating oils	13 02 06
other engine, gear and lubricating oils	13 02 08
mineral-based non-chlorinated insulating and heat transmission oils	13 03 07

Collection Category 2, 3 and 4:

Waste oils for processing to fuels
 (corresponding to type C of the internal classification)

- max. 50 mg/kg PCB (DIN EN 12766-1,2), max. 1.0 % total halogen in the organic phase (oil phase), in accordance with Annex II of the AltöV, flash point > 55° C

Used oils, which can be mixed with each other:

	<u>EWC code:</u>
mineral-based machining oils containing halogens (except emulsions and solutions)	12 01 06
mineral-based machining oils free of halogens (except emulsions and solutions)	12 01 07
synthetic machining oils	12 01 10
hydraulic oils, containing PCBs	13 01 01
mineral-based chlorinated hydraulic oils	13 01 09
synthetic hydraulic oils	13 01 11
readily biodegradable hydraulic oils	13 01 12
other hydraulic oils	13 01 13
mineral-based chlorinated engine, gear and lubricating oils	13 02 04
readily biodegradable engine, gear and lubricating oils	13 02 07
insulating or heat transmission oils containing PCBs	13 03 01
mineral-based chlorinated insulating and heat transmission oils other than those mentioned in	13 03 06
synthetic insulating and heat transmission oils	13 03 01
readily biodegradable insulating and heat transmission oils	13 03 08
other insulating and heat transmission oils	13 03 09
oil from oil / water separators	13 03 10
fuel oil and diesel	13 05 06
other solvents and solvent mixtures (kerosene)	13 07 01
	14 06 03

We offer special conditions for transport if there are quantities of heating oil, diesel oil, cleaner solvents or petroleum which have been collected and stored separately. The waste oils covered by the Ordinance on Waste Oils are listed above.

In addition to these, we accept other waste, if it is unmixed and separated according to the EWC Code. Other EWC codes and their designation can be gathered from the following list:

Emulsions and oil water mixtures for physicochemical treatment **(type E of the internal classification)**

- max. 50 mg/kg PCB (DIN EN 12766-1,2), max. 1.0 % total halogen in the organic phase (oil phase), in accordance with Annex II of the AltöV, flash point > 55° C, max. 3% sediments, pH-value 5 – 10 (DIN 38404-5)

	<u>EWC code:</u>
aqueous washing liquids and mother liquors	07 06 01
other organic solvents, washing liquids and mother liquors	07 06 04
machining emulsions and solutions free of halogens	12 01 09
aqueous washing liquids	12 03 01
steam degreasing wastes	12 03 02
non-chlorinated emulsions	13 01 05
bilge oils from inland navigation	13 04 01
bilge oils from other navigation	13 04 03
oil from oil / water separators	13 05 06
oily water from oil / water separators	13 05 07
other emulsions	13 08 02
wastes containing oil	16 07 08

Liquid waste for processing for energy recovery **(type F of the internal classification)**

- max. 50 mg/kg PCB (DIN EN 12766-1,2), max. 1.0 % total halogen in the organic phase (oil phase), in accordance with Annex II of the AltöV, flash point < 55° C

	<u>EWC code:</u>
petrol	13 07 02
other fuels (including mixtures)	13 07 03
other solvents and solvent mixtures	14 06 03

Liquid waste in accordance with the PCB/PCT Waste Ordinance and chlorinated used oil (Type G6 of the internal classification)

- PCB content > 50 mg/kg (DIN EN 12766-1,2) or > 1.0 % up to max. 3.0 % total halogen in the organic phase (oil phase), in accordance with Annex II of the AltöV

EWC Code:

mineral-based machining oils containing halogens (except emulsions and solutions)	12 01 06
hydraulic oils containing PCBs	13 01 01
chlorinated emulsions	13 01 04
mineral-based chlorinated hydraulic oils	13 01 09
mineral-based chlorinated engine, gear and lubricating oils	13 02 04
insulating and heat transmission oils, containing PCBs	13 03 01
mineral-based chlorinated insulating and heat transmission oils	13 03 06
other than those mentioned in	13 03 01

Brake Fluids and Antifreeze Fluids

EWC code

brake fluids	16 01 13
antifreeze fluids containing dangerous substances	16 01 14

Products based on polyglycols or other glycols and water soluble products are covered by EWC Code 12 01 10.

Questions? Contact us!

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LABORATORY SERVICES

AVISTA OIL Deutschland GmbH manages and designs its processes within an integrated management system (IMS).

It is certified according to ISO DIN 9001, ISO 14001 and ISO 50001, among others, and has many years of expertise in the field of mineral oil and water analysis.

The laboratories at the Dollbergen site, equipped with state-of-the-art analytical technology for quality control of all incoming goods as well as for safeguarding the refinery process, carry out chemical-physical analyses of used oils, mineral oils and lubricants as well as emulsions and water samples.

The range of services includes analyses according to methods in accordance with ASTM, CEN, DEV, DIN, IP, ISO as well as internal in-house methods and can also implement individual customer specifications. An extensive collection of national and international analytical methods is constantly updated.

The efficiency in the field of base oil, lubricant and water analysis is regularly and successfully proven by participation in national and international interlaboratory tests. AVISTA OIL Deutschland GmbH is a member of the DGMK (German Scientific Society for Petroleum, Natural Gas and Coal), the Technical Standards Committee for Mineral Oil and Fuel Standardisation (FAM) of the German Institute for Standardisation (DIN), Hamburg, which is responsible for mineral oil analysis, and also makes an active contribution to various FAM working committees.

Our price & service list

This is a list of selected services on the basis of which we will be happy to submit an offer to you. The procedures listed in this price list are routinely performed by us. Prices for analytical methods not listed and special examinations will be provided on request. In the case of larger numbers of samples or regular examinations, price reductions on the prices stated in this service list are possible. The processing time until the results are available is usually 5 working days after receipt of the sample. For very urgent orders, corresponding surcharges will be levied.



Mineral oil analysis

Method	Norm	Sample quantity [ml]	Price [€]
Appearance.....	AOD PA 056	20	22,-
Refractive index, refractometric.....	DIN 51423-1	10	22,-
Chlorine determination [RFA, ed].....	DIN 51577-4	10	85,-
Chlorine determination [Outcrop according to Wickbold]	DIN 51408-1	20	90,-
Conradson coke residue	DIN 51551-1	25	75,-
Demulsifying capacity.....	DIN ISO 6614	100	75,-
Density determination [Hydrometer]	EN ISO 3675	150	22,-
Density determination [Oscillating quartz]	EN ISO 12185	10	22,-
Element determination [RFA, ed] ¹⁾	AOD PA 092	10	85,-
FAME-content.....	EN 14078	10	65,-
Colour [ASTM – colour scale].....	DIN ISO 2049 / ASTM D 1500	20	22,-
Filterability, wet/dry	EN ISO 13357	500	345,-
Flash point Pensky-Martens [closed cup]	EN ISO 2719	100	35,-
Flash point Cleveland [open cup]	DIN EN ISO 2592	100	35,-
Total sulphur [RFA, ed]	EN ISO 8754	10	85,-
Total pollution, solid foreign matter [membrane filter]	EN 12662	10	45,-
Infrared spectroscopic analyse, qualitative	DIN 51451	10	45,-
Infrared spectroscopic determination CA/CP/CN [Structure group analysis according to Brandes]	AOD PA 023	10	45,-
Corrosion effect on copper [copper strip test].....	EN ISO 2160	100	65,-
Conductivity in oil	DIN 51412-2 / ASTM D 2624	250	35,-
Air separation efficiency [Impinger method]	DIN ISO 9120	200	100,-
Metals [ICP - OES], Additive/abrasive elements	DIN 51391-3	50	120,-
Neutralisation number.....	DIN 51 558-1	10	40,-
Noack-Evaporation loss	DIN 51 558-1	100	120,-
NMP-content.....	AOD PA 085	50	80,-
Otto fuel content	ASTM D 322	50	65,-
Oxide ash	EN ISO 6245	50	65,-
PCB-content and related products [Gas chromatography]	DIN EN 12 766-1,2,3	10	150,-
Pourpoint	ASTM D7346	50	75,-
Sampling [lance or outlet sample].....	AOD S 1.3		65,-
Purity class	DIN ISO 4406	200	90,-
Foaming tendency of lubricating oils Volume / time	ASTM D892	400	210,-
Sediments	DIN 51793	20	22,-
Boiling curve, normal pressure	EN ISO 3405	250	90,-
Simulated distillation [gas chromatography].....	DIN 51435	50	135,-
Sulfated ash.....	DIN 51575	50	90,-
TAN Total acid number	ASTM D 664	25	45,-
TBN Total base number.....	DIN ISO 3771 / ASTM D 2896	25	45,-
Tüpfeltest [spot test].....	AOD PA 014	10	22,-
Ugilec-content.....	see PCB content and related products		
Viscosity, dynamic [rotational viscometer]	DIN 53019	50	90,-
Viscosity, kinematic 40°C / 100°C [Houillon method]	ASTM D 7279	10	22,- per temperature
Viscosity index ²⁾	DIN ISO 2909		²⁾ 10,-
Viscosity, cold viscosity [Cold Cranking Simulator-CCS]	DIN 51377	100	85,-
Water content [Karl Fischer]	DIN 51777-1	10	45,-

¹⁾ Ag, As, Ba, Bi, Br, Ca, Cd, Co, Cr, Cu, Fe, Hg, I, K, Mn, Mo, Ni, P, Pb, Sb, Si, Sn, Ti, Tl, V, W, Zn, Zr

²⁾ only in connection with viscosity kinematic [40°C & 100°C]

Water analytics

Method	Norm	Price [€]
Ammonium	AOD PA 303 / 304	14,-
Bromide.....	EN ISO 10304-1,2	14,-
Biochemical oxygen demand [BSB]	EN 1899-1	49,50
Chemical oxygen demand [CSB]	AOD PA 411	20,-
Chloride.....	EN ISO 10304-1,2	14,-
Fluoride.....	EN ISO 10304-1,2	14,-
Total hardness.....	DIN 38409-6	33,-
Total bound nitrogen [TNB]	EN 12260	26,50
Total organic carbon [TOC]	EN 1484	26,50
Total dry residue	DIN 38409-1	21,-
Loss on ignition / residue	DIN EN 12879	16,50
Conductivity	EN 27888	6,-
Metals [ICP - OES], per element ¹⁾	EN ISO 11885	15,-
Nitrate.....	EN ISO 10304-1,2	14,-
Nitrite.....	EN ISO 10304-1,2	14,-
pH-value	DIN 38404-5	6,-
Phosphate, total	AOD PA 410	20,-
Acid and base capacity.....	DIN 38409-7	14,-
Sulphate.....	EN ISO 10304-1,2	14,-
Dry substance	DIN 38414-2	17,-
Hydrocarbon index [KW Index]	AOD PA 505	49,-

¹⁾ Al, As, Ca, Cd, Cr ges., Cu, Fe, Mg, Mn, Na, Ni, Pb, Si, Sn, V, Zn

Results delivery

You will be informed of the analysis results in writing as soon as possible (urgent results by telephone, fax or e-mail on request).

Sample provision

The samples are retained for three months. After this period, the samples will be destroyed by us or returned to you for our discharge.

Confidentiality

We undertake to maintain confidentiality about all processes. Information will only be given to third parties on your written instructions. Reproduction or publication of our findings requires our written consent.

Our laboratory shall exercise the necessary care in the performance of your services and possess the required expertise.

General Terms and Conditions of Sale and Delivery

The general terms and conditions of sale and delivery of AVISTA OIL Deutschland GmbH shall apply to the performance of the specified services. Accessible at <https://www.avista-oil.de/service/downloads/>

General informations

Prices

Our prices include all additional costs (e.g. sample storage, sample destruction, sample return).

Payment modalities

After submission of the results, you will receive a detailed invoice. The invoice is payable immediately upon receipt without discount.

Liability

AVISTA OIL Deutschland GmbH shall only be liable for damages if these have been caused culpably or through gross negligence by an incorrect test result. The liability is limited to the respective order amount. All claims for damages exceeding this amount are excluded.

In the case of samples with special risks (highly flammable, carcinogenic, development of toxic gases), the client must point this out in writing.



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YOUR NOTES

