

KlüberMonitor - Oil Condition Analysis

Laboratory analysis for used oil condition analysis



Benefits for your application

- **OCA - Oil Condition Analysis**
 - The analysis describes the current condition of an oil
- **Reliability**
 - Regular analyses reduce failure risk of expensive components or systems
- **Highly effective**
 - Useful life of lubricant is maximised
- **Convenience of use**
 - Kit for sampling and dispatch; standardised, compact and comprehensible report including recommendations
- **Product expertise at Klüber Lubrication**
 - Professional interpretation of results
- **Structured system**
 - Test results promptly after receipt

Description

Oil condition analyses made in Klüber Lubrication laboratories provide information on several aspects of an oil's current condition, including appearance, viscosity, ageing, water content and, if required, content of solid matter. Oil condition analysis includes infrared spectroscopy, an analysis of the additives as well as metal particles in the sample. The result of the analysis is summarised in a standardised, compact report describing the condition of the oil.

The analytical evaluation is shown with the following pictograms:



- Green frame, green tick: The oil quality is within the permissible limits and is fit for further use.
- Yellow frame, magnifying glass: The quality of the oil is within tolerable limits but shows deviations from the expected condition for its age. Machine inspection or general monitoring is strongly recommended. A recommendation for further action, e.g. a repeated analysis, is also made.
- Red frame, oil container: The oil is no longer fit for use. An oil change should be performed.

Application

Oil condition analysis can be performed for selected Klüber oils as well as for oils made by other manufacturers based on mineral oil, ester, polyalphaolefin or polyglycol. Approx. 70 ml of oil is required for an analysis. Analyses of other oils and other criteria can be performed on request. If an oil made by a manufacturer other than Klüber is to be analysed, a fresh sample of this oil must be supplied for comparison purposes.

Application notes

The result of the oil condition analysis depends largely on correct sampling. The sampling kit offered by Klüber Lubrication provides all materials required and a detailed description containing all information needed for correct sampling, including sample bottles with lids and labels. The sampling kit was developed by Klüber Lubrication for sampling and packing to high-quality standards. It is made of materials that are compatible with the lubricants to be analysed and protects the sample against contamination. The oil should be warm when sampled. For a succession of analyses, please always use the same sampling point in the system. The sampling kit contains comprehensive instructions that should be followed carefully. The report issued with the analysis contains a recommendation how to proceed with regard to the oil tested.

Please note: The specific conditions under which a machine or oil system operates are not necessarily known to Klüber Lubrication München. A single result is only a snapshot and recommendations can only be based on a trend over a series of samples.

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Klüber Lubrication sampling kit, article number: 999522

Content:

- sampling tube
- labels
- packages
- sample vessels
- sampling pump
- ball-point pen
- tube knife

- incl. laboratory analysis and report of the results



Reorder kit, article number 999523

Content:

- labels
- packages
- sampling tube
- sample vessels
- incl. laboratory analysis and report of the results

Analysis report, example

General information:		Equipment details:	
Company	Machine ID	Cement mill no. 2	
	Model	Vertical mill	
Contact	Manufacturer	-	
	Application	Rolling bearings of grinding rollers, oil sump lubrication	
Address	Remarks	Sample after 12 000 operating hours	
	Oil details:		
	Product name	Klübersynth GH 6-1000	
	Category of sample	In-house designation e.g. PG 1000	
	Age of oil [operating hours]	12.000	
Telephone	Average operating temperature	55	
	[°C]		



General information:		Equipment details:	
Fax:		Sample date	30 March 2009
Email:		Place of sampling:	Oil sampling valve at tank of oil circulation system of the mill – floor 4

Diagnosis

The neutralisation number/total acid number (NN, TAN) is slightly higher than in fresh oil, however it remains within a range that is normal for this type of sample. All other results are within tolerances. The oil is fit for further use.

Physical and chemical properties

Aspect	Viscosity at 40 °C (mm ² /s)	NN, TAN (mgKOH/g)	Water (weight %)	Solid matter >0.45 µm (weight %)
brown	28	2.96	0.44	0.06

Infrared spectroscopy (please observe also interpretation comment under "Diagnosis")

Identity	Additive decomposition	Oxidation	Alien oils	Cloudiness (soot, abrasion particles, deposits)
obvious	none	slight	none	none

Analysis of principal additive elements (ppm)

Ba	Ca	Mg	Cl	Sb	P	Zn	S	Na	Si	K
<10			20	<10	1530	29	30	<50	<10	

Analysis of principal abrasion elements (ppm)

Al	Cr	Cu	Fe	Pb	Sn	Mo	Ni	Ti	Ag	Mn	V
< 10			15	<10							

Legend

10 ppm: 0.001 %;

100 ppm: 0.01 %;

1 000 ppm: 0.1 %;

10 000 ppm: 1 %;

Sample reference no.

Date: DD.MM.YYYY

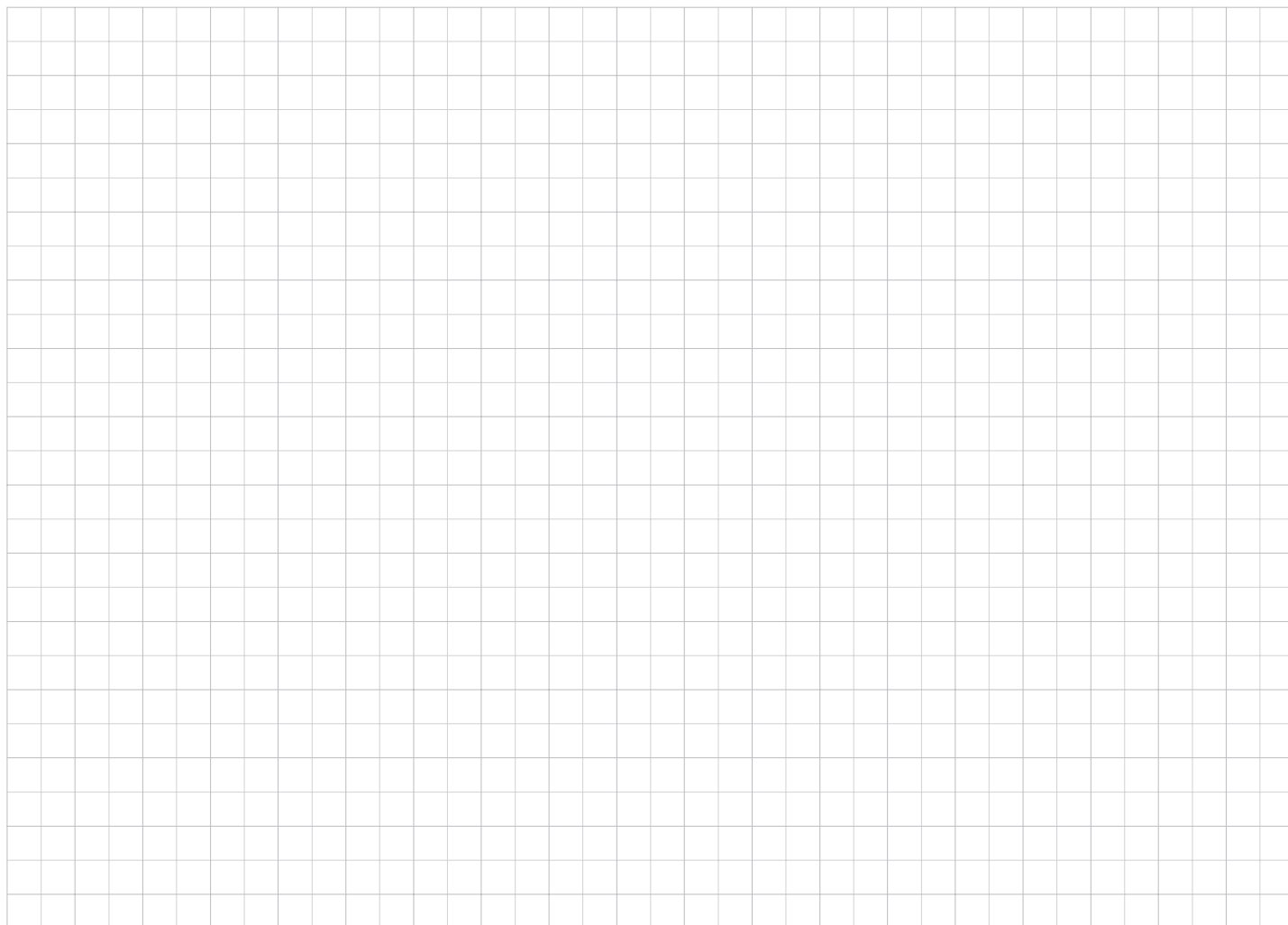
Lab request no.: LR 1234-00001714

Signature: Joe Sample



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Klüber Lubrication – your global specialist

Innovative tribological solutions are our passion. Through personal contact and consultation, we help our customers to be successful worldwide, in all industries and markets. With our ambitious technical concepts and experienced, competent staff we have been fulfilling increasingly demanding requirements by manufacturing efficient high-performance lubricants for more than 80 years.

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