

LAB REPORT

Unit id
CHP COMBINED HEAT/POWER UNIT
Component
Coolant

Lab number: 1704027

Machine type
CHP combined heat/power unit

Manufacturer
CHP Manufacturer

Coolant
Standard Coolant

Sample Report
Scope of Analysis: Coolant Set All Inclusive Premium

The sample is clear and shows only slight contamination. The typical coolant antifreeze (glycol) additives and glycol components are detectable. The pH value has increased slightly. Copper has increased slightly. You should monitor further changes based on the next analysis. Please send a control analysis to the laboratory after a short period of time.

Dipl.-Ing. Matthias Afmann



CAUTION

ANALYSIS RESULTS		Current sample	Previous samples →			
Lab number		1704027	1704028	1704029	1704030	
SAMPLE RATING						
Date of examination		20.01.2025	07.01.2025	06.12.2024	18.11.2024	
Date of sample taken		12.01.2025	22.12.2024	01.12.2024	10.11.2024	
Date of last coolant change		-	-	-	-	
Refill volume		-	-	-	-	
Coolant usage time		1500 h	1000 h	500 h	0 h	
Total operating hrs		1620 h	1120 h	620 h	120 h	
Coolant changed		-	-	-	no	
CONDITION						
Color	-	pink	pink	pink	pink	
Refractive index 20°C	-	1.3851	1.3853	1.3854	1.3856	
Glycol concentration	% [Vol/Vol]	50.9	51.1	51.2	51.4	
Density 20 °C	kg/m³	1074	1075	1075	1075	
PH value 25°C	-	8.4	8.4	8.3	8.0	
Conductivity 25°C	µS/cm	330	335	333	338	
Freezing point	°C	-48.8	-48.6	-48.6	-48.7	
WATER QUALITY						
Water hardness	°dH	7.2	7.3	7.3	7.2	
Alkaline earths	mmol/l	1.28	1.30	1.30	1.29	
Calcium	Ca mg/l	24.2	24.8	24.4	24.3	
Magnesium	Mg mg/l	16.3	16.6	16.9	16.2	
Sulphate	mg/l	19.3	20.4	20.4	14.0	
Chloride	mg/l	25.8	25.8	34.4	18.3	

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ADDITIVES							
Sodium	Na	mg/l	< 10.0	< 10.0	< 10.0	< 10.0	
Phosphorus	P	mg/l	13.0	14.0	13.0	13.0	
Boron	B	mg/l	< 10.0	< 10.0	< 10.0	< 10.0	
Potassium	K	mg/l	342.0	352.0	347.0	350.0	
Silicon	Si	mg/l	96.0	101.0	106.0	109.0	
Molybdenum	Mo	mg/l	< 1.0	< 1.0	< 1.0	< 1.0	
Effective Silicate		mg/l	205.4	216.1	226.8	233.3	
Nitrate		mg/l	< 5.0	< 5.0	< 5.0	< 5.0	
Nitrite		mg/l	< 5.0	< 5.0	< 5.0	< 5.0	
Phosphate		mg/l	< 5.0	< 5.0	< 5.0	< 5.0	
Adipic acid		mg/l	3885.7	3879.7	3941.0	3929.1	
Benzoic acid		mg/l	< 10.0	< 10.0	< 10.0	10.8	
Sebacic acid		mg/l	14780.4	14693.1	14853.3	14682.4	
Benzotriazole		mg/l	< 10.0	< 10.0	< 10.0	< 10.0	
2-ethylhexanoic acid		mg/l	< 50.0	< 50.0	< 50.0	< 50.0	
Tolyltriazole		mg/l	1162.1	1126.6	1115.9	1079.3	
Isononanoic acid		mg/l	< 50.0	< 50.0	< 50.0	< 50.0	
Octanoic acid		mg/l	< 50.0	< 50.0	< 50.0	< 50.0	
Mercaptobenzothiazole		mg/l	< 10.0	< 10.0	< 10.0	< 10.0	
Toluic acid		mg/l	< 10.0	< 10.0	< 10.0	< 10.0	
Acetate		mg/l	92.5	88.7	86.2	81.3	
WEAR							
Iron	Fe	mg/l	< 0.1	< 0.1	< 0.1	< 0.1	
Chrome	Cr	mg/l	< 0.1	< 0.1	< 0.1	< 0.1	
Aluminum	Al	mg/l	< 0.2	< 0.2	< 0.2	< 0.2	
Nickel	Ni	mg/l	< 0.1	< 0.1	< 0.1	< 0.1	
Copper	Cu	mg/l	2.7	2.3	1.5	< 0.1	
Lead	Pb	mg/l	< 0.1	< 0.1	< 0.1	< 0.1	
Zinc	Zn	mg/l	< 0.1	< 0.1	< 0.1	< 0.1	
Tin	Sn	mg/l	< 1.0	< 1.0	< 1.0	< 1.0	
DEGRADATION PRODUCT							
Glycolate		mg/l	29.0	21.5	15.1	8.6	
Formiate		mg/l	< 5.0	< 5.0	< 5.0	< 5.0	
Oxalate		mg/l	< 5.0	< 5.0	< 5.0	< 5.0	



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CONTAMINATION						
Fluoride	mg/l	< 5.0	< 5.0	< 5.0	< 5.0	
Bromide	mg/l	< 10.0	< 10.0	< 10.0	< 10.0	
Manganese	Mn mg/l	< 1.0	< 1.0	< 1.0	< 1.0	
Titanium	Ti mg/l	< 0.1	< 0.1	< 0.1	< 0.1	
Vanadium	V mg/l	< 0.1	< 0.1	< 0.1	< 0.1	
Silver	Ag mg/l	< 0.1	< 0.1	< 0.1	< 0.1	
Lithium	Li mg/l	< 1.0	< 1.0	< 1.0	< 1.0	

SAMPLE PICTURES



Any questions?

Phone: +49 8034 9047-210
ta@oelcheck.de

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