

LIEBHERR

CONSTRUCTION EQUIPMENT



MS20 - Diesel Engine

Sample No: LH0244841

Oil Type: DIESEL ENGINE OIL SAE 40



SAMPLE INFORMATION

| | | | | |
|---------------|-------------|-----|-----|-----|
| Sample Number | LH0244841 | --- | --- | --- |
| Sample Date | 14 Dec 2023 | --- | --- | --- |
| Machine Hours | 3388 | --- | --- | --- |
| Oil Hours | 0 | --- | --- | --- |
| Oil Changed | Changed | --- | --- | --- |
| Sample Status | NORMAL | --- | --- | --- |

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OIL CONDITION

| | | | | | |
|------------------|----------|------|-----|-----|-----|
| Visc @ 100°C | cSt | 13.4 | --- | --- | --- |
| Base Number (BN) | mg KOH/g | 6.0 | --- | --- | --- |
| Oxidation (PA) | % | 75 | --- | --- | --- |

Diagnosis

Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) DIESEL ENGINE OIL SAE 40. Please confirm.

Please specify the component make and model with your next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



CONTAMINATION

| | | | | | |
|----------------|-----|------|-----|-----|-----|
| Water | % | NEG | --- | --- | --- |
| Soot % | % | 0.7 | --- | --- | --- |
| Nitration (PA) | % | 78 | --- | --- | --- |
| Sulfation (PA) | % | 61 | --- | --- | --- |
| Glycol | % | NEG | --- | --- | --- |
| Fuel | % | <1.0 | --- | --- | --- |
| Silicon | ppm | 6 | --- | --- | --- |
| Sodium | ppm | 7 | --- | --- | --- |
| Potassium | ppm | 2 | --- | --- | --- |



WEAR METALS

| | | | | | |
|------------|-----|----|-----|-----|-----|
| Iron | ppm | 27 | --- | --- | --- |
| Copper | ppm | 2 | --- | --- | --- |
| Lead | ppm | 0 | --- | --- | --- |
| Tin | ppm | 0 | --- | --- | --- |
| Aluminum | ppm | 2 | --- | --- | --- |
| Chromium | ppm | <1 | --- | --- | --- |
| Molybdenum | ppm | 82 | --- | --- | --- |
| Nickel | ppm | 0 | --- | --- | --- |
| Titanium | ppm | 0 | --- | --- | --- |
| Silver | ppm | 0 | --- | --- | --- |
| Manganese | ppm | <1 | --- | --- | --- |
| Vanadium | ppm | 0 | --- | --- | --- |



ADDITIVES

| | | | | | |
|------------|-----|------|-----|-----|-----|
| Calcium | ppm | 2300 | --- | --- | --- |
| Magnesium | ppm | 508 | --- | --- | --- |
| Zinc | ppm | 1615 | --- | --- | --- |
| Phosphorus | ppm | 1149 | --- | --- | --- |
| Barium | ppm | 0 | --- | --- | --- |
| Boron | ppm | 56 | --- | --- | --- |

Depot: OSCLAF

Unique No: 10807192

Signed: Wes Davis

Report Date: 28 Dec 2023

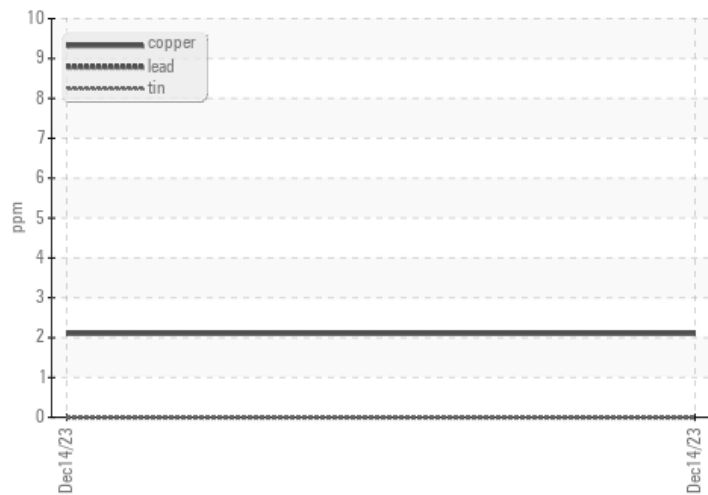


GRAPHS

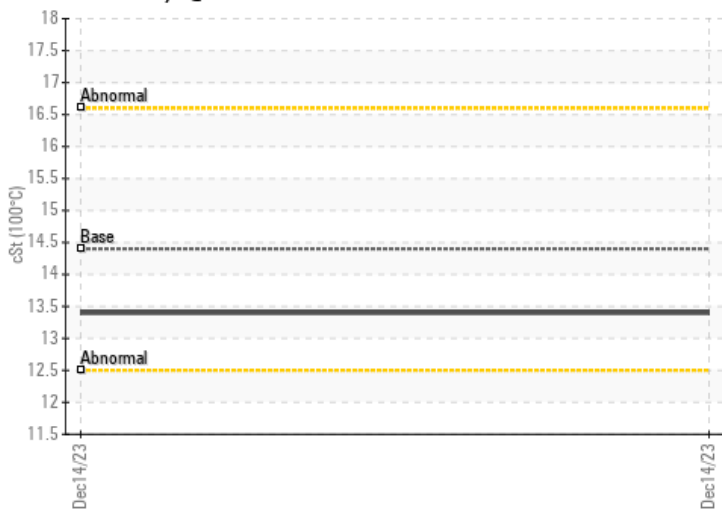
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

