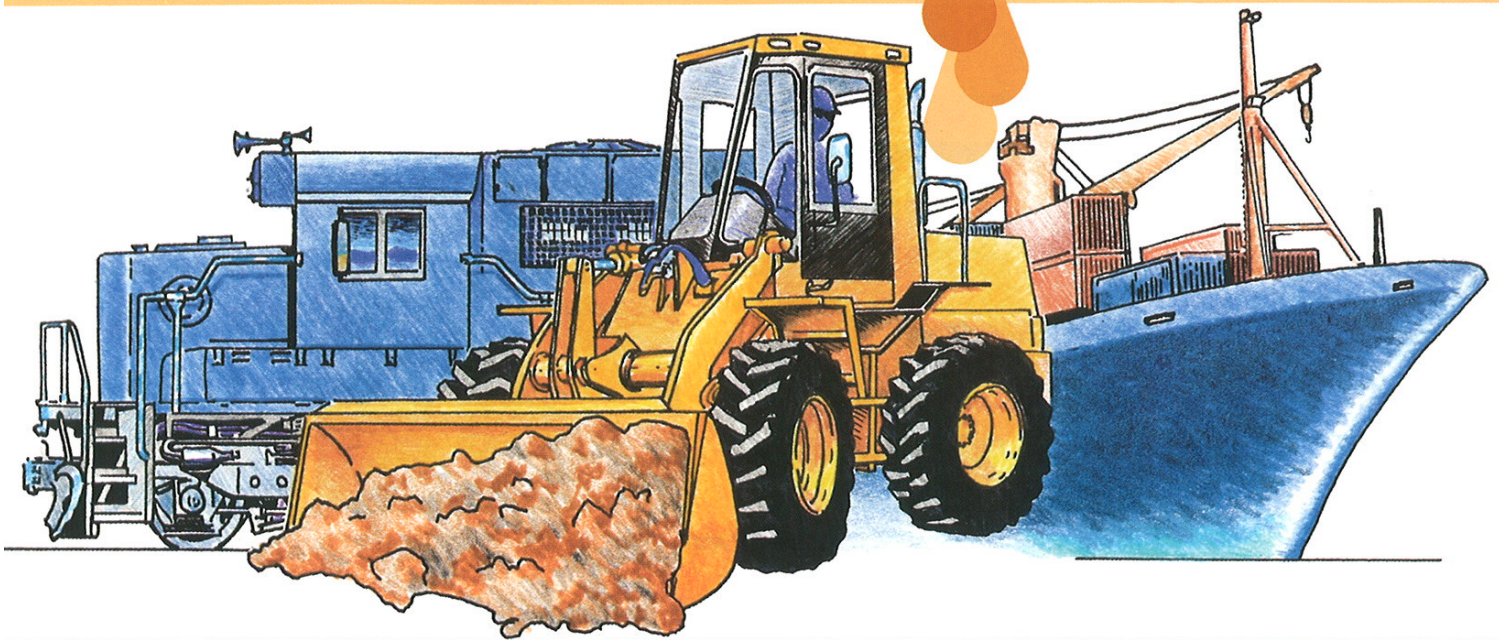


# TITRA-LUBE™ TBN



## Quantitatively Determines Total Base Number In Oil, On-Site

Dexsil's Titra-Lube TBN kit quantitatively determines Total Base Number in oil, on-site in less than 5 minutes. The kit provides a definitive colorimetric determination of TBN value between 0 and 20 mg KOH per gram of sample. Since the colorimetric test is carried out in the aqueous phase, the oil's color has no effect on the results.

TBN is the measure of reserve Alkalinity (base) of oils found in the form of additives. These additives combat the corrosive effects of sulfuric acid that forms during the combustion of sulfur-containing fuels. All liquid fossil fuels contain levels of sulfur from negligible quantities up to 5% or more. Higher sulfur levels in the fuel mean shorter usable lifetimes for the oil.

The Titra-Lube TBN Kit measures the TBN value quickly and easily on-site. The values provided by the kit have been correlated with values generated by ASTM procedure D2896 (standard test method for TBN of petroleum products by potentiometric perchloric acid titration).



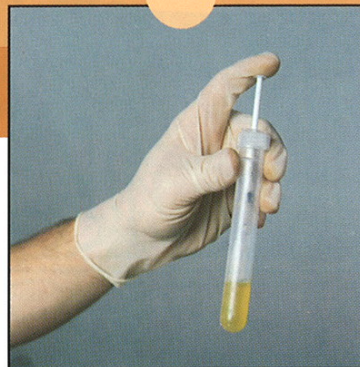
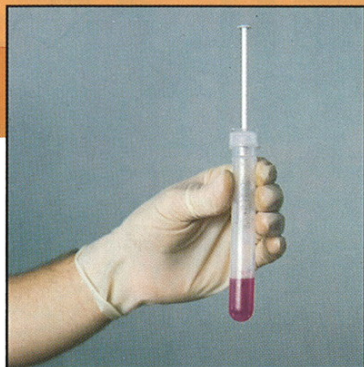
# DEXSIL®

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# TITRA-LUBE™ TBN



*When color changes from magenta to yellow, stop the test and read the TBN value from the side of the micro-burette.*

Extensive testing has been performed with TBN standards, commercial oils and used-oil samples.

The following table is a representative sample of test results showing the correlation:

Sample	ASTM D2896 Value	Titra-Lube TBN Value
Low Levels	2.05	2.3
	5.45	5.6
	6.93	6.6
	7.05	7.3
High Levels	10.13	10.4
	10.96	10.4
	12.44	12.6
	16.28	16.4

It is important to point out that the universal nature of Titra-Lube TBN's chemistry does not restrict its use to the 0-20 range of TBN values. By adjusting sample size it works equally as well at higher TBN levels.

If you would like more information on Dexsil's Titra-Lube TBN contact Dexsil today at (203) 288-3509.

## **DEXSIL®**

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Patent Pending

# TITRA-LUBE® TBN

Quantitatively Determines Total Base Number In Oil, On-Site



ASTM Method #D-5984-96

Diesel engine oils can be easily tested for Total Base Number (TBN) on-site or in the laboratory by using Titra-Lube TBN. TBN is the measure of reserve alkalinity (base) added to lubricating oils to protect the engine from the corrosive effects of acids formed during the combustion of fuels containing sulfur. Titra-Lube TBN can be used in the field or in a laboratory to accurately determine the oil's TBN level in less than 5 minutes. The test provides a colorimetric determination of TBN between 0 and 20 mg KOH per gram of sample. Oil color does not interfere with test results because the colorimetric determination is carried out in the aqueous phase. All premeasured reagents are non-hazardous, sealed in glass ampules and contain no F series solvents. Each kit contains everything needed to do the analysis.

<b>Analytes</b>	<b>Total Base Number</b>
<b>Matrix</b>	<b>Lubricating Oils, Industrial Oils</b>
<b>Detection Method</b>	<b>Quantitative colorimetric titration</b>
<b>Action Levels</b>	<b>0- 20 TBN Units (mg KOH/gm sample)</b>
<b>MDL</b>	<b>0.6 TBN Units</b>
<b>MQL</b>	<b>1.8 TBN Units</b>
<b>Overall Accuracy</b>	<b>10% +/- MDL</b>
<b>Analysis Time</b>	<b>5 minutes</b>

Catalog #  
TI-LUB

**Titra-Lube TBN**  
(Patent Pending)  
Packaged 20 kits to a shelf pack,  
80 kits per case. Minimum order is 20 kits.  
All orders must be in multiples of 20 kits.

## Titra-Lube TBN vs. ASTM D-2896 and D-4739

Sample	OIL TYPE	D-4739	D-2896	Titra-LubeTBN
A	NEW	1.31	0.90	0.85
B	NEW	7.05	7.87	7.53
C	NEW	12.46	14.78	13.62
D	NEW	11.2	12.44	11.58
E	USED	3.79	8.79	5.42
F	USED	9.61	13.55	11.36
G	USED	4.64	6.37	5.26
H	USED	13.05	16.76	15.5
I	USED	4.21	8.22	6.0
J	USED	4.03	8.48	5.7
K	USED	2.54	6.87	4.9
L	USED	2.54	6.89	4.3
M	USED	5.56	6.89	4.3
N	USED	7.25	11.12	9.5
O	USED	6.89	10.70	8.5

Table 2  
Comparison of ASTM method C2896 and Titra-Lube on new lubricating oil samples.

Sample ID.	ASTM Method C2896	Titra-Lube TBN
Amalie	12.09	12.6
Quaker State (SAE 30W)	8.72	8.7
Quaker State HD (20W-20)	8.08	8.2
Castrol GTX(10W-40)	7.84	7.2
Castrol Motorcycle	6.43	5.8
Kendall Super D III	10.96	10.4
Penzoil Multi High Viscosity	9.08	8.8
Amoco LDO All Seasons (20W-50)	8.95	8.5
Mobil 1 (15W-50)	7.05	7.4

Table 2  
Comparison of ASTM method D2896 and Titra-Lube TBN used diesel lubricating oil samples.

Sample ID.	ASTM Method C2896	Titra-Lube TBN
MO-1	8.17	1.2
DDO-1	6.93	6.6
TMO-LC1	6.48	6.2
JTF-KSDIII-1	7.24	6.5
EBU-1	5.45	5.9
CP-EE1	9.29	9.0
CDT-4309	8.37	7.5
CDT-9250	16.10	16.4
8RB357-250	13.40	12.8

- All reagents are premeasured and sealed in glass ampules
- Results are consistent and accurate
- All reagents are safe, no chlorinated solvents or chlorobenzenes
- Easy disposal in normal laboratory waste
- Results in less than 5 minutes
- Range: 0-20 TBN (mgKOH/gram of sample)
- Method Detection Limit (MDL): 0.6 mg KOH/gram of sample
- Minimum Quantitative Level (MQL): 1.8 mg KOH/gram of sample
- Test works equally well on new oils and dirty contaminated oils
- More efficient and economical than preparing standard laboratory reagents