



# LUB ANALAYSE

## PROPER PROCEDURE OF LUB SAMPLING

The key to successful monitoring for any in-service lubricant is to obtain a representative sample of the lubricant for analysis. So sampling should be done in stabilizing time of working equipment.

Sampling before and after oil addition or make up is not correct. Also sampling from all machines and equipment must be done from a point before filter or systems that cause separation of contaminant materials.

Pipe or channel of flowing fluid should be rinse correctly by under test fluid.

Apply clean and dry labelled container. The following information should be included on the label of a sample of in-service lubricant:

- Customer or company name and contact information
- The name of the product that was in service
- The date that the sample was collected
- The operating duration of the lubricant (hours or miles/km in service)
- The designation of the equipment from which the sample was collected
- Any additional information about the conditions of service that will aid the analyst in determining the condition of the grease

In the case of in-service lubricating grease, it is imperative to obtain a sample of grease that has been in the contact zone of the bearing, not just in the grease cavity. Sampling of grease should be done from different points and proper place. There are two general cases:

1. When possible, collect a sample of in-service grease from the contact zone in a bearing, gear, etc.
2. When bearings are totally enclosed (electric motors, etc.), collect in-service grease during republication as the old grease is purged from the bearing.

In either case, collect grease in a clean container to prevent contamination. The sample container must be impervious to the grease and not absorb oil from the grease.

If the kind of require test is not define, 1 litre for fluid or 1 kg for grease is necessary. For specified test the necessary amounts of sample defined by following table.

TEST	STANDARD	VOLUME (mL)
<b>LUB OIL LABORATORY TESTS</b>		
Shear Stability	ASTM D 6278	1000
kinematic Viscosity at 40°C,100°C	ASTM D 445	25
Dynamic Viscosity (Cold Cranking Simulator)	ASTM D 5293	100
Dynamic Viscosity (Brookfield)	ASTM D 2983	100
Viscosity Index	ASTM D 2270	50
Flash point & Fire point, COC(Cleveland Open Cup)	ASTM D 92	100
Pour point	ASTM D 97	55
Cloud point	ASTM D 2500	55
Aniline point	ASTM D 611	20
Specific Gravity (15°C)	ASTMD-4052	10
Specific Gravity (15°C)	ASTMD-1298	200
Base Number	ASTM D 2896	10
Acid Number	ASTM D 664 & ASTM D 974	50
Color(lovibond)	ASTM D 1500	55
Color(Say bolt)	ASTM D 56	75
Refractive Index	ASTM D 1218	10
Foam Stability	ASTM D 892	400
Air Release Value	ASTM D 3427	200
Rust Preventive (Sea water & Distilled water)	ASTM D 665 A&B	400
Copper Corrosion	ASTM D 130	100
Corrosion , Humidity Cabinet ( 10 Days)	ASTM D 1748	200
Corrosion , Salt Spray ( 1000 Hours)	ASTM D 117	1000
Carbon Residue, Conrad son	ASTM D 189	25
Carbon Residue ,Rams bottom	ASTM D 524	20
Ash Content	ASTM D 482	100
Sulphated Ash Content	ASTM D 874	100
Pentane & Toluene Insoluble	ASTM D 893	15
Water Content, Karl Fisher	ASTM D 6304C	50
Demulsibility	ASTM D 1401	100
Emulsion Stability	IP 263	50
Dielectric Strength	IEC 60156	500
Oxidation Stability RBOT	ASTM D 2272	100
Noack Volatility	ASTM D 5800	150
Element Content, ICP	ASTM D 5185	20
PCA or PNA Content, DMSO Extraction	IP 346	25
Cleanliness Level	NAS 1638 & ISO 4406	100
<b>COOLANT LABORATORY TESTS</b>		
Reserve Alkalinity	ASTM D 1121	50
Glass Ware	ASTM D 1384	750
pH	ASTM D 1287	80
<b>GREASE LABORATORY TESTS</b>		
Dropping Point	ASTM D 566	10 (gr)
Water Washout	ASTM D1264	50
Oil Separation From Grease	ASTM D 1742	150
Penetration Full Scale Cone	ASTM D 217	500
Copper Corrosion Of Grease	ASTM D 4048	100
Saponification Number	ASTM D 94	80

## OIL CONDITION MONITORING

Condition monitoring (CM) is the process of monitoring a parameter of condition in machinery (vibration, temperature etc.), in order to identify a significant change which is indicative of a developing fault. It is a major component of predictive maintenance.

Oil condition monitoring is about improving profits through reduction of costs, increased uptime and reduced unplanned downtime.

It provides an insight into how your machinery is performing, if it uses lubricating oil or grease we can provide you with expertise, guidance and support to help you get the most out of your equipment.



Oil condition monitoring provides you with the tools and insight needed to spot machine wear long before it becomes a costly repair.

**So why use Oil Condition Monitoring?**

**Regular oil analysis helps you to:**

- Safely extend oil drain intervals
- Schedule maintenance
- Reduce unplanned downtime
- Extend warranties
- Increase efficiency
- Reduce costs, increase profits