

The European Engine Lubricant Quality Management System (EELQMS) and it's audits.

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ATIEL's QMS Committee

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Today's session - what we will cover

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ATIEL and EELQMS

02

Audits

03

EELQMS Auditor's
checklist

Today's session

01

ATIEL and EELQMS

ATIEL

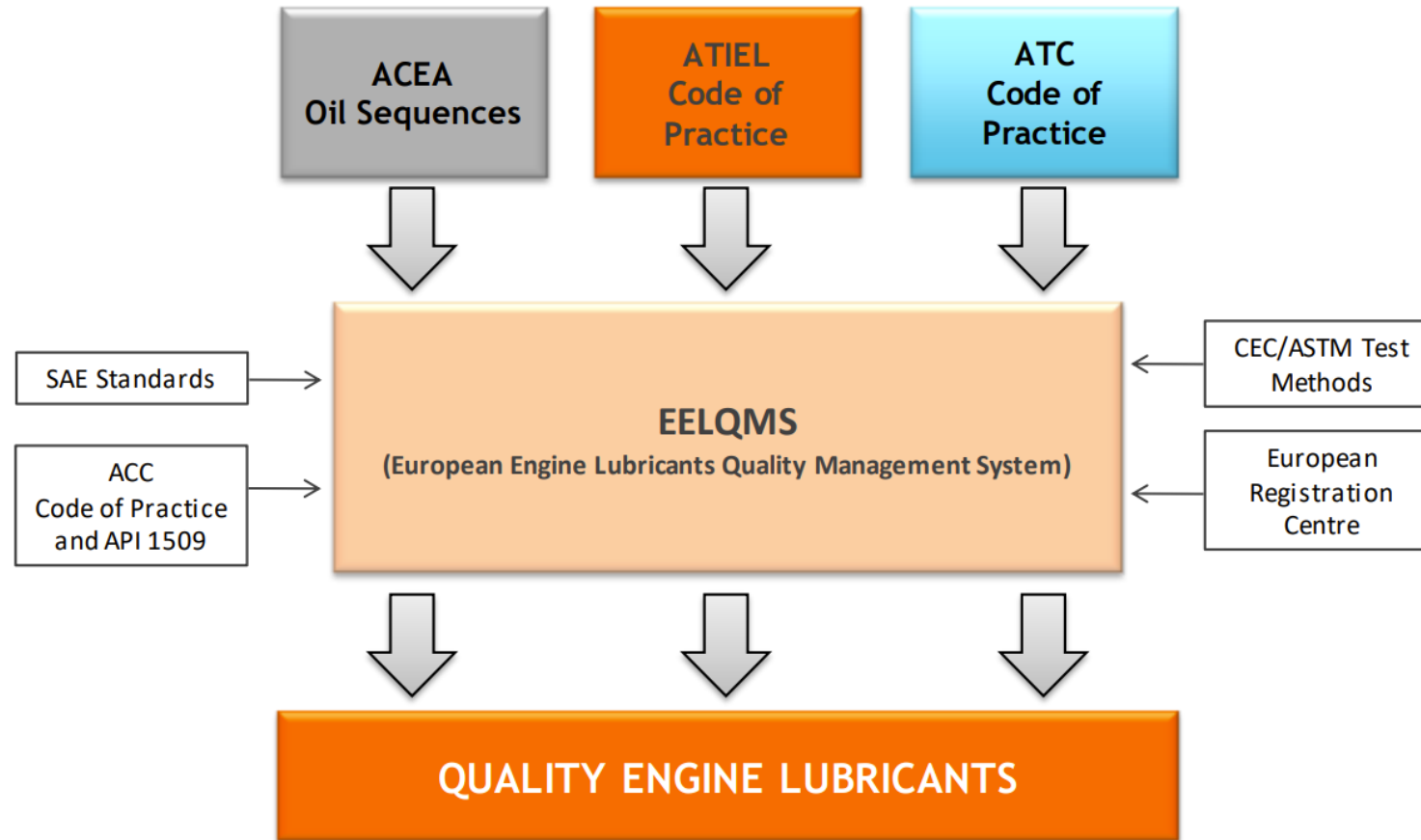
The technical association of the European lubricants industry

- Non for-profit association under Belgian law (Association Sans But Lucratif-ASBL).

Represents the common interests of European lubricant manufacturing and marketing companies

- Membership open to companies actively engaged in the marketing and/or manufacture of lubricants in Europe.
- Promotes dialogue between its members and associated industries on technical issues, regulations, specifications and Codes of Practice.

About the EELQMS

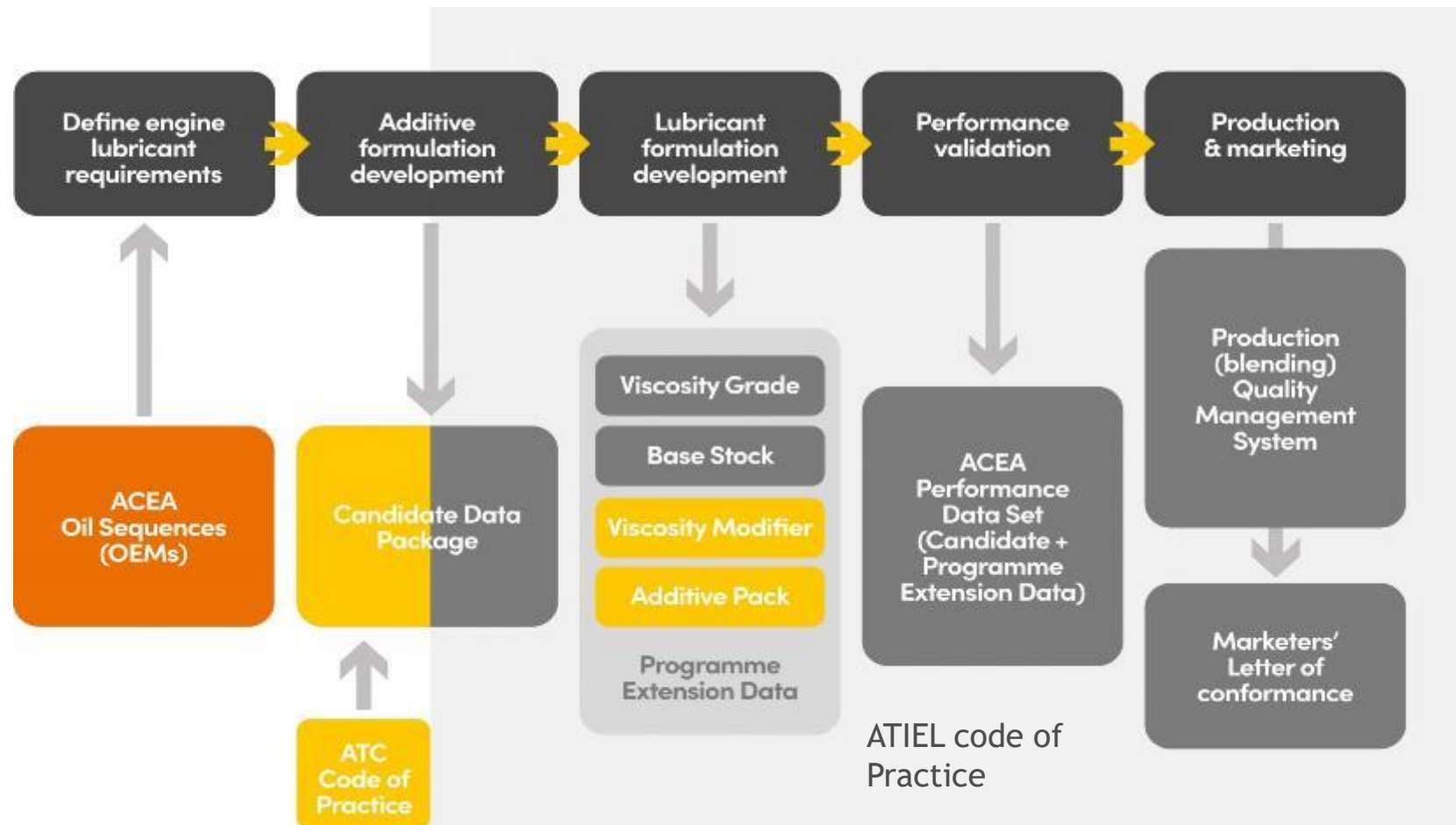


Why quality is important

- Vehicle OEMs need to know that appropriate quality engine lubricants will be available in all their markets.
- Trade/workshops need assurance that inadequate lubricant performance will not lead to warranty claims.
- Consumers need confidence in the quality of the products being used in their vehicles.



EELQMS: Applying the ATC and ATIEL codes of practice according to ACEA sequences



About the EELQMS

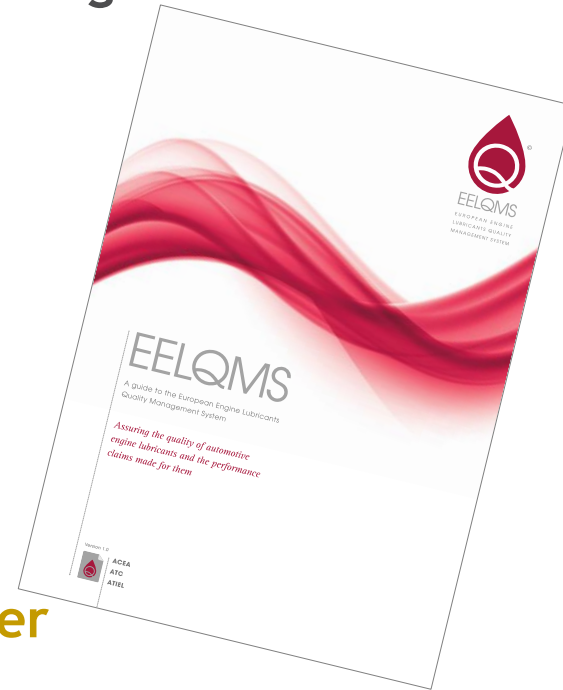
- Voluntary quality management system for automotive engine lubricants - but ACEA requires marketers making claims to comply with EELQMS.
- The ONLY system that can be used to qualify engine lubricants against ACEA Oil Sequences.
- Developed by industry stakeholders to promote development of improved, fit-for-purpose engine lubricants that meet increasing technical requirements.
- Designed to assist lubricant marketers in assuring the quality of their lubricants and performance claims made for them in the marketplace.
- The ATIEL Code of Practice is a key element of the EELQMS.
- Visit: www.eelqms.eu



Summary of EELQMS guidelines

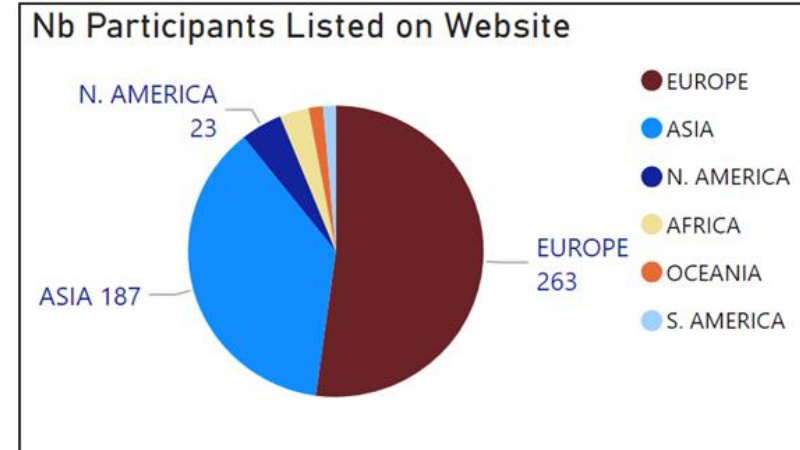
Lubricant marketers developing engine lubricants in compliance with ACEA Oil Sequences shall carry out formulation development, blending and marketing in accordance with the guidelines in the ATIEL Code of Practice :

- **Incorporating EELQMS guidelines in a quality management system (eg ISO 9001, or ISO TS 16949)**
- **Ensuring an independent audit of the lubricant development process.**
- **Having Code of Practice checklists signed off by an authorized company representative.**
- **Blending products according to requirements of ATIEL Code of Practice, including accreditation to an auditable QMS.**
- **Signing a Marketers' Letter of Conformance and submitting the Letter and quality certificates to the EELQMS administrators, SAIL.**



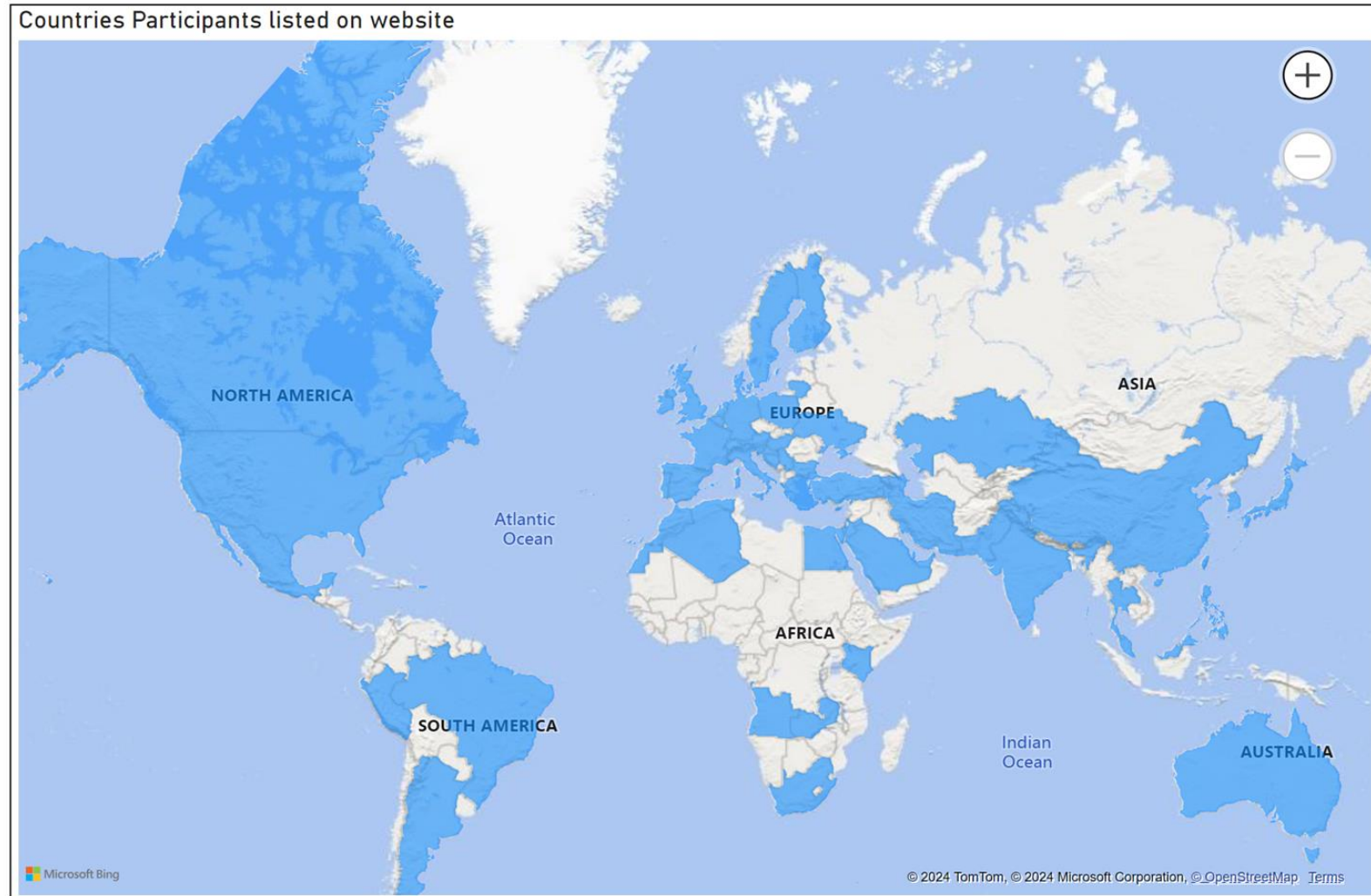
Registration Status

- Number of registrants 19/09/2025
- Listed on website = 504
- All listed participants signed LoC



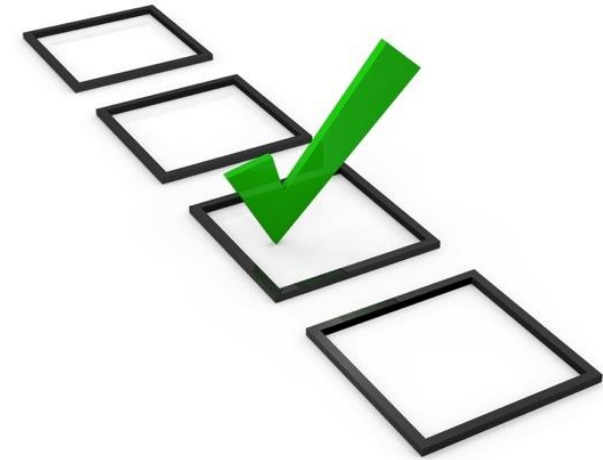
Nb Participants Listed on Website - Continent		
CONTINENT	Nb Participants	Nb Sig %
⊞ AFRICA	16	3.2%
⊞ ASIA	187	37.1%
⊞ EUROPE	263	52.2%
⊞ N. AMERICA	23	4.6%
⊞ OCEANIA	8	1.6%
⊞ S. AMERICA	7	1.4%
Total	504	100.0%

Global reach



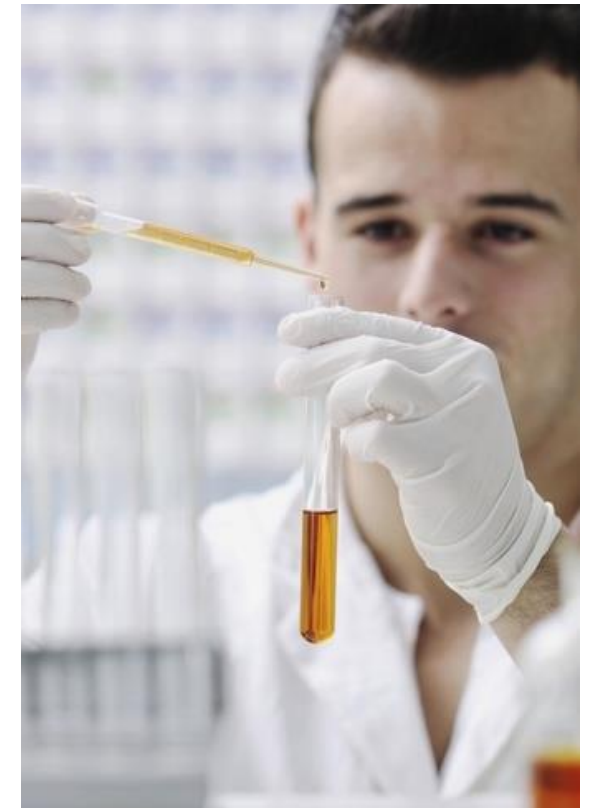
ATIEL's/SAIL Quality surveys

- The objective is to test lubricants for conformance against the ACEA specifications that are being claimed
- Lubricant brands tested are marketed by signatories of the EELQMS Marketers' Letter of Conformance (LoC)
- Where a product is marketed with an ACEA claim by a marketer that has not signed the LoC, the marketer is informed of the position of ACEA and encouraged to sign or remove the ACEA claim(s) from their products
- Lubricant marketer or Manufacturer must demonstrate a suitable quality system is in place
- Oil products are purchased by independent contractor from retail outlets and authorised distributors
- Objective is to test three different samples from each oil marketer, each three-year period



Quality survey methodology

- All samples sourced independently, coded and ‘blind’ tested.
- Tested against most appropriate ACEA European Oil Sequences and parameters including:
 - Viscosity (high and low temp)
 - Noack volatility
 - SAPS (Sulphated Ash, Phosphorous & Sulphur)
 - TBN (Total Base Number)
- Testing and statistical analysis conducted by independent expert laboratory.
- Individual results shared only with respective marketer.
- Appropriate follow-up actions and sanctions in case of serious breaches of compliance.



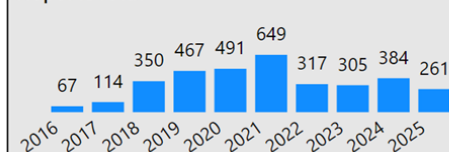
SAIL SURVEYS - # Remarks /parameter

2025 = 8 months

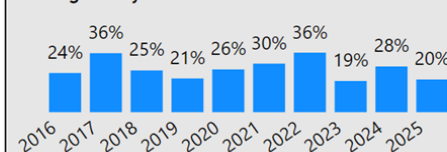
Number of Remarks per parameter in %

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
ReportsTotal	67	114	350	467	491	649	317	305	384	261	3405
ACEA %	21%	8%	25%	25%	39%	37%	33%	13%	20%	18%	27%
TBN %	18%	25%	10%	10%	13%	12%	15%	7%	3%	4%	10%
KV100 %	1%	2%	1%	0%	1%	1%	3%	0%	1%	0%	1%
MRV %	3%	4%	2%	3%	5%	5%	8%	4%	10%	3%	5%
YS %	1%	2%	5%	7%	6%	7%	13%	8%	8%	7%	7%
P %	0%	4%	1%	1%	1%	1%	2%	2%	2%	2%	1%
S %	0.0%	0.0%	0.0%	0.4%	0.0%	0.3%	0.6%	0.0%	0.3%	0.4%	0.2%
CCS %	3%	3%	3%	2%	3%	4%	9%	3%	3%	4%	4%
SA %	4%	4%	8%	4%	6%	10%	14%	6%	7%	4%	8%
HTHS %	3%	4%	8%	4%	7%	6%	8%	6%	7%	4%	6%
Noack %	0%	1%	2%	0%	0%	0%	2%	1%	1%	0%	1%

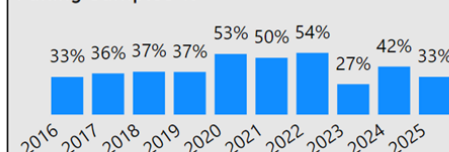
ReportsTotal



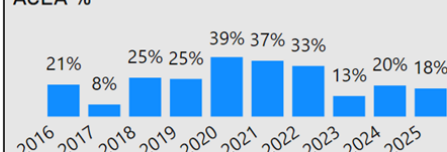
Failing Analyses %



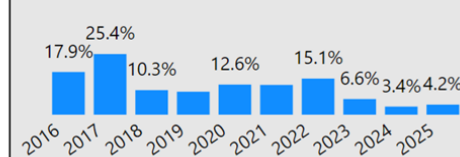
Failing Samples %



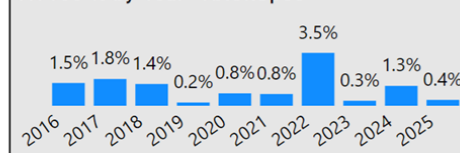
ACEA %



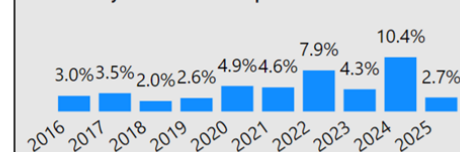
TBN %



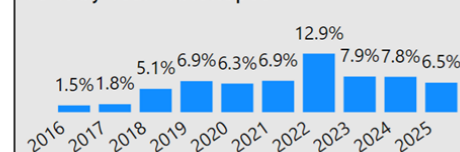
KV100 % by Year-TblOilSpec



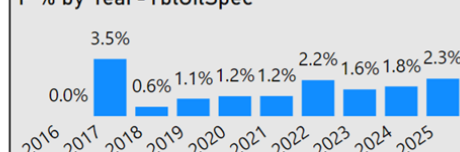
MRV % by Year-TblOilSpec



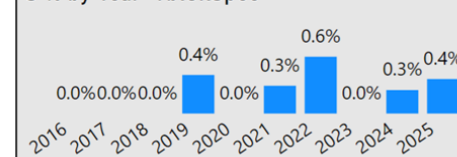
YS % by Year-TblOilSpec



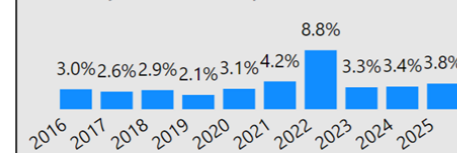
P % by Year-TblOilSpec



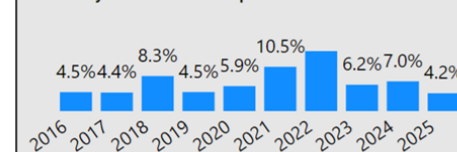
S % by Year-TblOilSpec



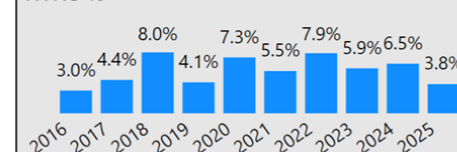
CCS % by Year-TblOilSpec



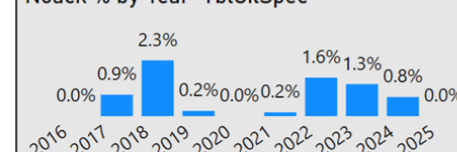
SA % by Year-TblOilSpec



HTHS %



Noack % by Year-TblOilSpec



A Very Bad Example of survey findings

Analytical Parameter	Standard	Unit	Result	Repetition	Limit
Kinematic Viscosity at 100°C	D445	mm ² /s	9,971	9,962	12.5 - <16.3
CCS at -30°C	D5293	mPa•s	40199	39861	6600
MRV at -35°C	D4684	mPa•s	TVTM	TVTM	30,000
Yield Stress	D4684	Pa	< 350	< 350	No yield stress
HTHS at 150°C	D4683	mPa•s	3.15	3.16	≥3.5
Noack Volatility	D5800	%M/M	7.5		≤13
Sulphated Ash	D874	mass %	0.62		≤0.8
TBN D2896	D2896	mg KOH/g	5.3	5.5	≥6.0
Phosphorus content	D5185	% m/m	0.0426	0.0426	≥0.07 - ≤0.09
Sulphur content	D5185	% m/m	0.03539		≤0.03

One of possible area for improvement is to streamline the process of auditing the implementation of EELQMS guidelines by engine oil manufacturers.

Today's session

02

Audits

Audit

According to ISO 27001

Audit - A systematic, independent and documented process conducted to obtain audit evidence and evaluate it objectively to determine the extent to which the audit criteria are met

The audit must be:

- systematic
- independent
- documented

EELQMS - A guide to the European Engine Lubricants Quality Management System

Pkt. 5 EELQMS guidelines



<http://www.eelqms.eu/>

Pkt. 5 EELQMS guidelines

Companies intending to market, develop or manufacture engine lubricants for which compliance with ACEA Oil Sequences will be claimed shall apply the guidelines of the EELQMS, as detailed below:

- a) Incorporate the EELQMS guidelines, as described in this document, and/or in the constituent Codes of Practice, in a QMS such as ISO 90017, or ISO TS 169498. Incorporation does not require reproduction of all the EELQMS guidelines in the QMS, but it does require proper referencing to the EELQMS in the QMS to ensure that effectively the same result is achieved.
- b) Ensure an independent assessment of the marketing, development, and manufacturing processes by internal and/or external auditors, who should report their findings to the relevant company management.
- c) Conduct all engine tests at accredited laboratories in line with the requirements defined in the ATC or ACC Codes of Practice, as applicable.
- d) Carry out all development in accordance with relevant Codes of Practice, in particular:
VGRA (Viscosity Grade Read-Across) in accordance with the ATIEL Code of Practice;
BOI (Base Oil Interchange) in accordance with the ATIEL Code of Practice;
VMI (Viscosity Modifier Interchange) in accordance with the ATC Code of Practice;
performance additive package modifications in accordance with the guidelines included in the ATC or ACC Codes of Practice, as applicable.
- e) Manufacture the product in plants conforming to the requirements described in the ATIEL Code of Practice, including accreditation to auditable quality management systems.
- f) Sign the Lubricant Marketers' Letter of Conformance and submit it to ATIEL, the administrators of the System

The Atiel Code of Practice

Pkt 10.1 Monitoring, measurement, analysis and evaluation



<http://www.atiel.org>

The Atiel Code of Practice

Pkt 10.1 Monitoring, measurement, analysis and evaluation

10.1 Monitoring, measurement, analysis and evaluation

Lubricant developers, lubricant marketers and lubricant manufacturers shall keep records to enable proper monitoring, measurement, analysis and evaluation of their practices and procedures.

Lubricant developers shall keep records of all development programmes, including Candidate Data Package, relevant test reports (Section 5), programme extensions and read-across (Section 6) and Final ACEA Performance Data Sets (Section 7). These records should be sufficiently complete to enable independent evaluation that all development work was carried out in compliance with the relevant requirements of the Code.

Lubricant marketers shall keep records of Final ACEA Performance Data Sets that demonstrate that the relevant requirements of the claimed ACEA sequences have been met in full.

Lubricant manufacturers shall keep records of manufactured batches and their constituent components that demonstrate that the manufactured lubricant formulation, including all programme extensions, matches that finalised by the lubricant developer.



<http://www.atiel.org>

10.2 Audit

The records shall be made available for periodic internal audit. Internal audits should be independent of the entity being audited.

Internal audits should be thorough, including for example a complete “vertical” audit through a lubricant development project, from design to Final ACEA Performance Data Set, or a complete “horizontal” audit through development, marketing claims and manufacturing procedures.

In addition to internal audit, management may commission an external audit, by a fully independent company or entity with sufficient expertise in either the lubricants industry, or in quality assurance systems.

10.3 Management review

Management shall review the results of all internal and external audits.



<http://www.atiel.org>

No formal checklist for EELQMS auditors
until 2025



Today's session

03

Auditor's checklist

CASE STUDY

Problem

I am a signatory to EELQMS which obliges me to conduct regular audits by internal auditors. I do not know what in detail my auditors should check to make sure that the scope of the audit is accurate and as detailed as that of other EELQMS signatory companies.

Explanation

Section 5 of the “EELQMS - A guide to the European Engine Lubricants Quality Management System” (available at <https://www.eelqms.eu/>) as well as Pkt. 10.2 of ATIEL CoP requires companies intending to market, develop or manufacture engine lubricants for which compliance with ACEA Oil Sequences will be claimed, to keep records that enable independent assessment of their relevant processes by internal and/or external auditors however so far there was no detailed and standardised checklist available.

To support EELQMS signatories ATIEL's QMS committee with collaboration of SAIL has recently designed freely available standardized tools for EELQMS auditors.

What should I do if I observe that case within my company?

Inform your Internal auditors that a standardized tool for EELQMS auditors has been developed and is currently available on the SAIL website.

During next EELQMS audit, Your auditors should check documentations and company records according to 12 points included in the prepared Auditor Checklist and Flowchart.

EELQMS BULLETIN
No. 10 - 28TH
APRIL 2025

EELQMS Auditor checklist

1. Check allocated internal code for the Product Brand Name (PBN).
2. Search for formulation linked to internal code stored in database.
3. Request Candidate Data Pack (CDP) and/or ACEA (association of European Automotive Manufacturers) Performance Data Set for listed formulation.
4. The auditor should check that the CDP meets the current valid iteration(s) of the ACEA European Engine Oil Sequences.
5. Check formulation in CDP and/or ACEA Performance Data Set matches the product formulation from blend records.

EELQMS Auditor checklist

- 6. Check the Quality Controls listed for PBN are aligned to characteristics shown in the CDP and/or ACEA Performance Data Set.**
 - a. The CDP and/or ACEA Performance Data Set will not necessarily list Production Tolerances but there will be typical values of key characteristics.
 - b. The Quality Control (QC) protocol must be derived from CDP and/or ACEA Performance Data Set, material specifications from additive producers, SAE (Society of Automotive Engineers) J300 and ACEA European Engine Oil Sequences.

- 7. Check specification claims for PBN in labels and technical data sheets match those listed in CDP and/or ACEA Performance Data Set.**
 - a. If a claim for a formal OEM approval is being made, check the blender has corresponding approval letters for PBN from Original Equipment Manufacturers (OEMs) whose specifications are claimed.
 - b. Check the formulation code in the OEM approval letter matches the code in the CDP and/or ACEA Performance Data Set etc.
 - c. It is not unusual that some CDP and/or ACEA Performance Data Set specifications are not used for PBN for marketing reasons.

EELQMS Auditor checklist

- 8.** Check blending records from a sample of blends, for example 10% of batches blended within the past twelve months of the PBN and verify the formulation used matched database and CDP and/or ACEA Performance Data Set records.
- 9.** Move to raw material inventory.

EELQMS Auditor checklist

- 10. Is there evidence of inventory of the exact raw materials listed in CDP and/or ACEA Performance Data Set/database for PBN?**
- a. It may be needed to check the storage areas for visual evidence of stocks of materials.
 - b. Drums or Intermediate Bulk Containers (IBCs) will carry labels from producer showing Trade Name, Batch Number and Date of Production.
 - c. Bulk materials, mainly base oils and possibly some additives, may be stored in tanks which do not carry producer's details. A label or tank designation is not sufficient evidence of the contents. Refer to purchasing records. There should be documentation available showing the contents of the tank by Trade Name and latest Batch Number delivered within stockholding records held by the Lubricant Marketer and/or their toll blender. Check inbound Certificates of Analysis for raw materials.
 - d. Do the trade names match the raw materials in CDP and/or ACEA Performance Data Set?
 - e. Are there consistent records of inbound Certificate of Analysis (CoA) for the given materials? Check that all aspects of the CoA are consistent with the specification held by the Lubricant Marketer for both properties, limits (where stated), and values of the batch).
 - f. Does the CoA batch number match the batch on the material.
 - g. Does the CoA show all expected properties are present to the right values and reported with the right units to the right methodology?

EELQMS Auditor checklist

- 11. Check procurement records and invoices of raw materials listed.**
- a. Are there regular purchases?
 - b. Since the last audit was undertaken, the ISO auditor needs to satisfy themselves that the quantities of raw materials purchased support the volume of finished lubricants produced, at the correct treat rates, of the PBN by referring to blend records over the previous period since the last audit.
 - c. For some components purchased at very low treat rates occasional purchasing may occur, for example once a year or once every two years. Where regular purchases don't match the production volumes and treats rates as set out within the CDP, the Lubricant Marketer should provide evidence that the raw materials purchased matches those set out within the CDP.
 - d. Note: raw materials may be used for several different PBNs so purchased volumes may greatly exceed the manufactured volume of PBN alone but should not be less.

EELQMS Auditor checklist

- 12. It is possible that formulation for PBN was changed for commercial reasons. If this situation occurs:**
- a. Check date of migration from previous formulation to alternative.
 - b. Repeat steps 1 to 11.

Publications



ATIEL Code of Practice on Auditing and Assessment - Flowchart

Published on March 27th 2025.

ATIEL, the Technical Association of the European lubricants industry, has developed two tools to strengthen Lubricant Marketers' compliance with the engine oil sequences of the European vehicle manufacturers, ACEA. The tools comprise of an auditor checklist and a flowchart.

The flowchart is intended as a marketer self-reference tool to support the quality management production process of finished lubricants, from specifying the products performance claims and technical specification at the outset, securing suitable raw materials from accredited or approved suppliers, blending within a quality management framework and finally quality assuring the finished lubricants meet the intended specification.

 Download PDF




ATIEL Code of Practice on Auditing and Assessment - Checklist

Published on March 27th 2025.

ATIEL, the Technical Association of the European lubricants industry, has developed two tools to strengthen Lubricant Marketers' compliance with the engine oil sequences of the European vehicle manufacturers, ACEA. The tools comprise of an auditor checklist and a flowchart.

The checklist helps Lubricant Marketers meet the requirements of Section 10.2 of the ATIEL Code of Practice on Auditing and Assessment in supporting both internal and external auditors in reviewing the quality management frameworks within which finished lubricants making claims against the ACEA engine oil sequences, are produced. The checklist can be utilised by external quality management auditors as part of their regular review, or by internal auditors to ensure continued compliance with the framework.

 Download PDF

Checklist can be downloaded from <https://www.sail-europe.eu/publications>

EELQMS -Summary of stakeholder benefits

OEMs

- Controlled and consistent quality of engine lubricants
- Wide availability of lubricants meeting ACEA requirements
- Protection against warranty claims



End user

- Trouble-free operation
- Confidence in lubricant performance claims
- Wide availability of lubricants of appropriate quality



Lubricant and additive industry

- Timely, cost-effective engine lubricant development
- Common approach & standards (level playing field)
- Formulation optimisation and controlled flexibility



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