The lubricants industry and its organisations

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The lubricants industry

- Many organisations are involved in the lubricants industry worldwide
- Additive companies, oil companies, OEMs, testing laboratories
- Each industry group and each individual company has their own business priorities
  - Industry Groups aim to find best solutions, but are not always in agreement

Additive companies
- Provide formulations tested to consistent standards designed to ensure lubricants will protect engines
- Minimise engine testing complexity and proliferation of specifications
- Offer value added products to the industry
- Offer solutions to meet new hardware performance requirements

Oil companies
- Consist of Lubricant Oil Marketers and Baseoil Suppliers
- Lubricant Oil Marketers offer thoroughly tested, high quality, differentiated lubricants to the market meeting OEM needs
- Baseoil suppliers offer the base oil component which when enhanced with additives provide formulations to lubricate engines

OEMs (Original Equipment Manufacturers)
- Seek suitable lubricants for protection of their vehicles
- Offer higher value/higher performance products to end users that comply with the more and more stringent environmental requirements.

Test laboratories
- Help develop and maintain high quality engine and bench tests to the lubes industry
Additive company associations

- Europe
  - ATC

- North America
  - ACC
ATC - Technical Committee of Petroleum Additive Manufacturers in Europe

• Formed in 1974, ATC comprises Infineum and our competitors as well as component suppliers
• Membership is open to any additive company which manufactures petroleum additives, or has comprehensive test facilities, in Europe
• Covers lubricant additives (crankcase, transmission, industrial) as well as fuel additives
• Provides a forum for technical and regulatory developments
  – Major focus on health and safety of chemicals and associated legislation
• Issues a code of practice for engine oil development
  – Code covers test laboratory requirements, test registration, formulation modifications and reporting of data
  – Focus on CEC tests
• Interacts with ATIEL and ACEA to aid the definition of lubricant specifications

Website www.atc-europe.org
ACC - American Chemistry Council

- Formerly CMA – Chemical Manufacturers Association
- Represents the whole US chemical industry
- Health & Safety, Environmental
  - Product approval protocols
- One division in ACC is the Petroleum Additives Panel (PAP) which itself consists of 3 task groups
  - Fuel Additives Task Group (FATG)
  - Health, Environmental and Regulatory Task Group (HERTG)
  - Product Approval Protocol Task Group (PAPTG)
- Consists of major additive companies active in lube oil development
- Since 1992 has issued a Product Approval Code of Practice for engine oil development
  - Code covers test laboratory requirements, test registration, formulation modifications and reporting of data
  - Focus on ASTM tests

- Website [www.americanchemistry.com](http://www.americanchemistry.com)
Oil marketer Industry Associations

- Europe
  - ATIEL

- North America
  - API
ATIEL (Association Technique de l'Industrie Européenne des Lubrifiants)

• Represents the European and international lubricants industry
  – Includes companies with headquarters outside Europe which market lubricants in Europe
• Member companies discuss technical issues relating to the lubricants industry in Europe
  – Product quality and specifications
  – Health Safety and the Environment
• Issues a code of practice for lubricant marketers covering engine oils designed to meet ACEA Sequences
  – Base Oil Interchange, Viscosity Grade Read Across and Viscosity Modifier Interchange guidelines are followed
• ATIEL code is used in conjunction with ATC and ACC codes of practice as part of EELQMS (European Engine Lubricant Quality Monitoring System)
• Lube marketers making claims against ACEA Oil Sequences are required by ACEA to submit a letter of conformance to EELQMS

Website www.atiel.org
API – American Petroleum Institute

- Represents all aspects of America’s oil and natural gas industry
  - Producers, refiners, suppliers, pipeline operators, marine transporters as well as service & supply companies
- Lubricants Group reports to the Downstream Lubricants Committee and is comprised of base stock producers, lubricant marketers, additive companies and additive component suppliers with material interests in North America.
- Issues and monitors an Engine Oil Licensing and Certification System (EOLCS) for passenger car and heavy duty diesel engine lubricants
  - Similar to the ATIEL code this includes guidelines for Base Oil Interchange and Viscosity Grade Read Across
- Issues API ‘S’, ‘C’ and now ‘F’ category specifications
- Issues product licenses (“Donut” and “starburst”) and operates an audit program to check compliance of licensed oils
Engine builders

• Groupings
  – ACEA (European Automobile Manufacturers Association)
    • European manufactures of passenger cars and heavy duty vehicles
  – EMA (Engine and Truck manufacturers association)
    • North American heavy duty manufacturers
  – AAM (Alliance of automobile manufacturers)
    • North American light duty manufacturers
  – JAMA (Japan automobile manufacturers association)
    • Japanese vehicle manufacturers
    • Includes motorcycles
  – ILSAC (International lubricants standardisation and advisory committee)
    • International group comprising AAM, EMA, JAMA

• Individual Builders (OEMs)
ACEA (European Automobile Manufacturers’ Association)

- Replaced the previous organisation in Europe (CCMC)
- Includes Light Duty and Heavy Duty Engine Manufacturers, open to OEMs who manufacture in Europe
- Includes all major European OEMs, including some with parents outside Europe
  - e.g. Ford, Toyota
- First issued lubricant sequences in 1996 covering Gasoline, Light Duty and Heavy Duty Diesel lubricants
- No direct quality monitoring, logos or approvals but require oils that make claims against ACEA Oil Sequences to be developed using EELQMS (European Engine Lubricant Quality Monitoring System)
  - Linked to ATC, ATIEL, ACC and API Codes of Practice

Website: [www.acea.be](http://www.acea.be)
EMA - Engine & Truck Manufacturers Association

• Trade organisation of mainly US Heavy Duty Diesel OEMs including: Volvo/Mack, Caterpillar, Cummins, Detroit Diesel, GM Powertrain, Navistar, John Deere, PacCar, Ford
• Participates in industry discussions on performance categories for HDD lubricants, fuels and after treatment fluids
• In conjunction with API and ACC, develop specifications for HDD lubricants

Website: www.engine-manufacturers.org
AAM - Alliance of Automobile Manufacturers

• Trade association of 12 of US Car and Light Duty Diesel OEMs including: BMW, Fiat Chrysler, Ford, GM, JLR, Mazda, MB, Mitsubishi, Porsche, Toyota, VW and Volvo Cars

• Leading advocacy group promoting sustainability mobility with focus on the environment, energy and motor vehicle safety

• AAM and JAMA are the light duty vehicle manufacturers that are part of ILSAC. EMA is also a constituent of ILSAC.

Website: [http://www.autoalliance.org/](http://www.autoalliance.org/)
JAMA – Japan Automobile Manufacturers Association

- Trade Organisation of Passenger Car, Heavy Duty OEMs and Motorcycles
- OEM’s recommend API, ACEA or JASO quality when their genuine oils is not available
- Outside Japan OEMs recommend API or ACEA quality
- Work through JASO (Japan Automobile Standards Organisation) to develop lubricant specifications

Website: [www.jama-english.jp](http://www.jama-english.jp)
ILSAC - International Lubricant Standardisation and Advisory Committee

- Includes AAM and JAMA members
  - EMA also members but not active in ILSAC specification development
  - ACEA invited but has not joined this group
- Develops lubricant specifications through collaboration with other industry organisations including API and ASTM
- Lubricant requirements are based on API categories with fuel economy requirements (GF-3, GF-4, GF-5 etc.)
- Through API Engine Oil Licensing and Certification System EOLCS, ILSAC qualified oils can be licensed with the API “Starburst”
Test development and testing organisations

• Europe
  – CEC – Co-ordinating European Council for the Development of Performance Tests for Fuels, Lubricants and other Fluids
  – IP – Institute of Petroleum
    • Develops oil analysis test methods
  – GFC – Groupement Française de Coordination
    • Develops bench tests, mainly for the French oil and motor industry

• North America
  – ASTM International (formerly known as American Society for Testing and Materials)
    • Develops engine and analytical tests
Test development and testing organisations

- ISO – International Standards Organisation
  - Has national affiliates e.g. BSI (UK), DIN (Germany), AFNOR (France), SIS (Sweden)
  - Develops test methods
- Japan
  - JASO (Japan Automobile Standards Organisation)
    - Develops Japanese tests with support from JAMA and industry partners
  - JPI (Japan Petroleum Organisation)
    - Performance bench tests and analytical tests
CEC

- Develops test methods for performance testing of transportation fuels, lubricants and other fluids
- CEC test methods are used extensively in Europe and widely throughout the world
- CEC board comprises representatives from industry stakeholders (ACEA, ATIEL, ATC, Concawe)
- Project groups formed by representatives from individual oil companies, OEM’s, test laboratories, additive companies.
  - Test Development Groups
  - Surveillance Groups
- Unlike the ASTM (NA), CEC covers only test methods and not classifications
The European AAA

Joint discussions on new performance categories, tests and limits

ATC
Additive development

ATIEL
Lubricant developing/marketing

ACEA
Performance categories

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<table>
<thead>
<tr>
<th></th>
<th>Europe</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine/Bench testing rules</td>
<td>ATC</td>
<td>ACC</td>
</tr>
<tr>
<td>(additive companies)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base stock and VGRA guidelines</td>
<td>ATIEL</td>
<td>API</td>
</tr>
<tr>
<td>(oil companies in EU, oil and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>additive companies in NA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine builder (OEM) interests</td>
<td>ACEA</td>
<td>EMA, ILSAC</td>
</tr>
<tr>
<td>Specifications</td>
<td>ACEA, OEMs</td>
<td>API, ILSAC, OEMs</td>
</tr>
<tr>
<td>Oil Licences</td>
<td>OEMs</td>
<td>API, OEMs</td>
</tr>
<tr>
<td>Oil Approvals</td>
<td>OEMs</td>
<td>OEMs</td>
</tr>
</tbody>
</table>
Organisations that classify engine oil performance

- National bodies/International Associations/Industry Groupings
  - API (American Petroleum Institute)
  - JASO (Japanese Automotive Standards Organisation)
  - ILSAC (International Lubricant Standardization and Approval Committee)
  - ACEA (European OEMs)

- Original Equipment Manufacturers
  - Mercedes-Benz
  - Volkswagen-Audi
  - BMW
  - Porsche
  - MAN
  - Volvo
  - MTU
  - Scania
  - GM
  - and others
OEM approvals

- OEM’s issue approval (or acknowledgement) for branded oils upon submission of the appropriate documents in various combinations according to OEMs, can include for example:
  - Cover letter
  - Application Form
  - Confirmation/No-objection letter
  - IR Trace
  - Oil sample

- OEMs moving to online approval systems
  - e.g. MB approval is now on-line only via their “BEAM” system.

- Each OEM has their own system
OEM approvals - definitions

• **Original Approval**
The first time an oil is presented for approval at the OEM
May be submitted by add co. requesting Trading Approval, or an oil marketer

• **Trading Approval “Handelsfreigabe”**
Approval of a specific *oil code* requested by add co. which then gets ‘Reblended’

• **Package Approval**
Approval of an additive package allowing flexible use in a range of base oils and VI Improvers without further engine testing
Only certain HDD OEM’s apply this and is restricted to particular specifications and viscosity grades
OEM approvals - definitions

• **Reblend Approval**
  An oil holding Trading Approval gets re-blended at another location by oil marketers under different brand names

• **Rebrand Approval**
  An oil holding Original Approval or Reblend Approval is sold under a different Brand Name (blended at the same location)

• **Confirmation/No Objection Letter**
  Written permission from the owner of a Trading Approval that a third party may re-blend their oil formulation. Required by MB and BMW