

# Newsletter

## January-February 2019

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**Tribology is only meaningful when measured against recognised standards, such as ASTM international.**

Founded in 1898 and formerly known as the American Society for Testing and Materials, ASTM International is a globally recognized leader in the development and delivery of international voluntary consensus standards. Today, some 12,000 ASTM standards are used around the world to improve product quality, enhance safety, facilitate market access and trade, and build consumer confidence.

**ASTM Tribology Testing Standards** are referenced under Tribonet's website covering tests related to abrasion, grease, erosion, material, lubricants, and finally corrosion. A detailed list of web references is also provided.

Please visit <http://www.tribonet.org/tribology-testing-standards/> .

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### ETT – Essential Tribology Terminology

**More simple definitions for three of tribology's essential terms:**

- **MRV - Mini Rotary Viscometer** is designed to measure yield stress and viscosity of drive line lubricants and new and used automotive engine oils over a temperature range of  $-5^{\circ}\text{C}$  to  $40^{\circ}\text{C}$ . The MRV instrument determines pumping viscosity in accordance with the latest SAE J300 specifications.
  - **Neutralization Number (NN)** – An indication of the acidity or alkalinity of an oil.
  - **NLGI** - National Lubricating Grease Institute.
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**“Materials DO Matter”**

**Free Afternoon Seminar**

**Wednesday 6 February 2019 Science Park, 1 Northway, Kelvin – 13:00-16:00**

**Calling all Tribologists:** An afternoon seminar will be held on 6 February 2019, at Science Park. There will be light refreshments, followed by a programme which will start with an overview, and include short presentations on topics relevant to materials and their importance in tribology. To ensure your place on the seminar, please let the SAIT know if you will be attending, either by email to [secretary@sait.org.za](mailto:secretary@sait.org.za) or [admin@sait.org.za](mailto:admin@sait.org.za), or by telephone at 011 804-3710.

## SAIT Training

Follow the path from data to information and into knowledge:

LE 119:	18 - 22 February 2019, Johannesburg
LE 120:	6 - 10 May 2019, Johannesburg
LE 121:	27 - 31 May 2019, Durban
LE 122:	22 - 26 July 2019, Johannesburg
LE 123:	26 - 30 August 2019, Cape Town
LE 124:	7 - 11 October 2019, Johannesburg

**Costs: SAIT Members: R16 031 Non-Members: R17 894 Students: R4 922**

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## EU Modifies Lubes Ecolabel Standard

See full report at: <https://pubs.lubesngreases.com/lubereport-emea/>

As of September 2018, 454 lubricant products are licensed under the EU Ecolabel. Products certified to meet its criteria are authorized to display the Ecolabel logo on the package or container, which boosts their image as environmentally friendly products.

The 2018/381/EU standard adopted by the European Commission requires lubricants to meet eight criteria to gain permission to bear the EU Ecolabel. A transition period between the existing and new standards lasts until Dec. 31, 2019, and the new criteria will remain valid until Dec. 31, 2024,

South Africa currently has no mandatory lubrication standards – never mind the important role of ‘environmentally friendly’ products under a certified label. *It’s all about being aware of the cost of lubrication and not the price of uncertifiable oil.*

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## INTERNATIONAL EVENTS

**2 April 2019 – UNITI Mineral Oil Technology Congress – Stuttgart, Germany:**  
[www.umtf.de](http://www.umtf.de)

**15 – 17 May 2019 – SERBIATRIB '19 – 16th International Conference on Tribology** - will be held in Kragujevac (Serbia), at the Faculty of Engineering, University of Kragujevac - [www.serbiatrib.fink.rs](http://www.serbiatrib.fink.rs)

**25 to 27 June 2019 – 12<sup>th</sup> International Colloquium Fuels – Conventional and Future Energy for Automobiles.** *Colloquium Office:* Werner Schollenberger, email [werner.schollenberger@tae.de](mailto:werner.schollenberger@tae.de); *Registration and Accommodation Service:* online - [www.tae.de/go/fuels](http://www.tae.de/go/fuels), email: [Alexandra.fisch@tae.de](mailto:Alexandra.fisch@tae.de); *Venue:* Technische Akademie Esslingen e.V., an der Akademie 5, 3760 Ostfildern.

## **DID YOU KNOW?**

### **'A tribological tip-trip'**

**The Stribeck Curve** plays a role in forecasting the role of a lubrication regime. **The Stribeck Curve is an overall view of friction variation in the entire range of lubrication, including hydrodynamic, mixed, and boundary lubrication.**

Tribology is the science and technology of interacting surfaces in relative motion. It includes the study and application of the principles of friction, lubrication and wear. By means of the Stribeck curve the transitions from boundary lubrication to mixed lubrication and the transitions from mixed lubrication to hydrodynamic lubrication can be predicted and subsequently the lubrication regime in which a particular contact operates can be predicted.

**Reference:** <https://za.grundfos.com/service-support/encyclopedia-search/stribeck-curve.html>

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## **PARTING SHOT**

### **Tsunamis in Indonesia have recently dominated headlines**

**It all starts with friction – Tsunami: Mechanics of a Tsunami Wave**

<https://www.maine.gov/mema/maine-prepares/preparedness-library/tsunami-wave-mechanics>



**Picture at:** <https://secure-a45d.kxcdn.com/wp-content/uploads/2015/10/current-affairs26.jpg>

Tsunami waves are generated by events that displace water. This displacement can be caused by movement of the ocean floor, by underwater or shoreline landslides or land slumps, volcanic activity, large releases of gases from the ocean floor, atmospheric pressure waves, by a large meteorite or asteroid plunging into the ocean.

### **Displacements of the ocean floor...**

Tsunami waves are often generated along fault lines in the earth's crust, typically in areas where the continental and oceanic plates are in compression. As a general rule, the continental plate rides over top of the oceanic plate. While the edges of both plates are engaged (not moving with respect to each other), the compressive forces that result from the overall plate movement causes tension to build up between the plates in the subduction zone. Eventually the increasing pressure causes the edges of the plates disengage, allowing the plates to shift. The earthquake that results from the fracturing and subsequent movement of the plates may produce a tsunami. Earthquakes can also generate a tsunami by causing subterranean landslides and land slumps, especially near the edge of the continental shelf.

### **Movement of tsunami waves...**

Tsunami waves move rapidly across oceans once generated. The speed and height of the tsunami wave depends on the depth of the ocean floor. In areas of the Pacific where the ocean depth is 20,000 feet (6,1km), tsunami waves are less than a foot (0,304m) high and move at speeds of about 550mph (885kph) - about the speed of a jet. The tsunami wave length can stretch nearly 100miles (160km) and this large wavelength allows the tsunami to travel great distances while losing little energy. As the wave encounters shallower water the speed of a tsunami wave slows and the height increases. In about 300 feet (91m) of water, a tsunami wave will slow to about 60mph (96kph) and in 30 feet (9,1) of water the wave will slow to 20mph (32kph).

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