



TRIBOLOGY – is over 500,000 years old!

Tribology milestones go back 500,000 years when primitive men understood the concept of friction and used it to produce heat and fire in their daily activities (**Please visit <http://www.tribonet.org/tribology-history/>**)

ETT – Essential Tribology Terminology

We continue to demystify the language of tribology in small slices

- ✓ **Antioxidant** – See Oxidation inhibitor
- ✓ **Oxidation Inhibitor** - A substance added to a petroleum product to increase its oxidation resistance and thus prolong its service or storage life. Also called an anti-oxidant
- ✓ **API** – American Petroleum Industry

SAIT TRAINING – A path to power

“LUBRICATION ENGINEERING”

- Five-day course - 5 CPD credits

Course Objectives: This is designed to transfer a thorough understanding of tribology from a lubrication engineering perspective. Over 20 topics take participants through basic chemistry to the theory of rubbing contact and friction in all industrial applications including the application of management principles, safety and the environment in tribology.

21-25 August Cape Town - 2017
16-20 October Johannesburg

For more information and to register for training please Ctrl + Click
<http://www.sait.org.za/events/training>

TRAVEL – 2017/2018 International Events!

| | |
|-----------------|---|
| Sept 17-22 | 6th World Tribology Congress – Beijing China |
| Nov 15-16 | 4 th ICIS & ELGI Industrial Lubricants Conference – Vienna Austria |
| 31 Oct – 2 Nov | 6 th African Base Oils and Lubricants Conference - Ghana |
| Jan, 9-11, 2018 | 21st International Colloquium Tribology, Industrial and Automotive Lubrication Germany/Stuttgart, EU |

NATIONAL LUBRICANT / OIL SPECS

Current South African National Specifications are being reviewed. The intention is to ensure that national specifications are current and in line with the vehicle parc in the region

These include:

- SANS 1842 High Performance Engine oil for petrol engines (API SM)
- SANS 1516 High performance engine lubricating oil for petrol engines (for API Service Category SL)
- SANS 1843 High performance engine lubricating oil for diesel engines (for API Service Category CJ-4)
- SANS 1517 High performance engine lubricating oil for diesel engines (for API Service Category CH-4)

These will be issued shortly for public comment.

The following standards have recently been published.

- SANS 290:2016: Mineral insulating oils - Management of polychlorinated biphenyls (PCBs)
- SANS 555-2:2017: Fluids for electrotechnical applications Part 2:



- Unused uninhibited mineral insulating oils for transformers and switchgear
- SANS 555-4:2017: Fluids for electrotechnical applications Part 4: Recycled uninhibited mineral insulating oils for transformers and switchgear
 - SANS 1755:2016: Petroleum jelly (petrolatum)
 - SANS 1782-2:2016: Lubricants, industrial oils and related products (class L) - Family T (Turbines) - Specification for lubricating oils for turbines
 - SANS 11158:2017: Lubricants, industrial oils and related products (class L) - Family H (hydraulic systems) - Specifications for categories HH, HL, HM, HV and HG.
 - SANS 12925:2017: Lubricants, industrial oils and related products (class L) - Family C (Gears) - Part 1: Specification for lubricants for enclosed gear systems. ISO 12925-1: 1996, Lubricants, industrial oils and related products (class L) - Family C (Gears) - Part 1: Specification for lubricants for enclosed gear systems.

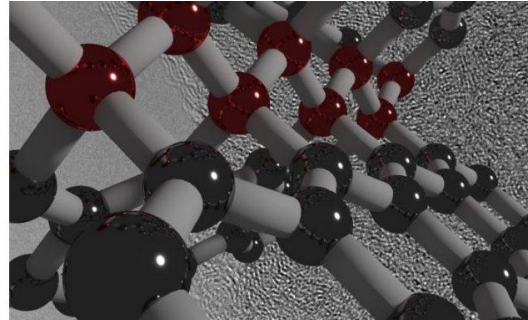
For more information please visit www.sabs.co.za

Hard, but highly elastic form of carbon developed

A team including several Carnegie scientists has developed a form of ultra-strong, lightweight carbon that is also elastic and electrically conductive. A material with such a unique combination of properties could serve a wide variety of applications from aerospace engineering to military armour.

Carbon is an element of seemingly infinite possibilities. This is because the configuration of its electrons allows for numerous self-bonding combinations that give rise to a range of materials with varying properties. For example, transparent, super-

hard diamonds, and opaque graphite, which is used for both pencils and industrial lubricant, are comprised solely of carbon.



<http://www.tribonet.org/highly-elastic-form-of-carbon-developed/>

UPCOMING EVENTS

Tues 5 Sept 2017 at 17:00 at Science Park, 1 Northway, Kelvin

- "High Pressure Systems for Diamond Synthesis" by Dr Noel J Pipkin

Wed 19 Sept 2017 at 17:30 at Science Park, 1 Northway, Kelvin

- "The Essentials of Formulating and Blending Synthetic Lubricants and PAO vs GRP III"

3 Oct 2017 at 16h00 Webinar

- "Report Back from the World Tribology Congress in Beijing in September" by Patrick Swan

DID YOU KNOW? – 'A tribological tip-trip'

'**Superlubricity**' is a recently invented term in tribology, which is generally defined as the state, at which the friction coefficient is low. The definition of "low" is not quite clear, but it can be assumed less than 0.01-0.001. for more info visit

<http://www.tribonet.org/wiki/superlubricity/>



What is Lithium?

As we enter the age of electric cars and electronics, the word 'lithium' takes on a more popular presence in lithium-ion batteries. But major industrial use of lithium are in ceramics and glass for glazes with improved physical properties including low coefficients of expansion.

The third most common use of lithium is in greases. Lithium hydroxide is a strong base and, when heated with a fat, produces a soap made of lithium stearate. Lithium soap thickens oils, and it is used to manufacture all-purpose, high-temperature lubricating greases.

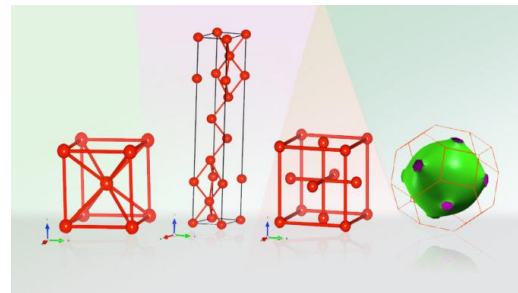
Grease made with lithium **soap** ('lithium grease') adheres particularly well to **metal**, is non-corrosive, may be used under heavy loads, exhibiting good temperature tolerance

So, what is lithium?

Lithium (from Greek: *lithos*, "stone") is a chemical element - symbol **Li** and atomic number 3. Lithium metal is soft enough to be cut with a knife. When cut, this alkali metal possesses a silvery-white color that quickly changes to gray as it oxidizes to lithium oxide. It is the lightest metal and the lightest solid element under standard conditions for temperature and pressure. Like all alkali metals, lithium is highly reactive and flammable, and is stored in [oil](#). It never occurs freely in nature, but only in (usually ionic) compounds. Due to its solubility as an ion, it is present in ocean water and is commonly obtained from brines.

While it has one of the lowest melting points among all metals (180 °C), it has the highest melting and boiling points of the alkali metals.

https://en.wikipedia.org/wiki/Lithium#Lubricating_greases



TOPICS – please!

We are looking for presenters to conduct technical webinars, on topics of interest to our members – please submit names and a brief overview

FEEDBACK – please!

To ensure that the SAIT is serving your needs we would like to encourage all members to make proposals / suggestions as to what you like, dislike and proposed changes that you would like to see.

- ❖ What topics would you like to see being presented or discussed?
- ❖ Topics for Webinars

This is for you – we would appreciate your assistance. E-mail admin@sait.org.za
