ENGINEERS AUSTRALIA

Earn CPD hours

Site Visit to BOC Acetylene and Nitrous Oxide Plants

Hosted by: Andrew Dowley and Billy Chan

Event Details -

Acetylene (C_2H_2) – lighting the way for over a century! Is acetylene dead?
Acetylene is used largely as a fuel gas for oxy-acetylene cutting and welding. Other processes requiring a high temperature/flame, specialised lighting, laboratory instrumentation, refinement of products also utilise this versatile gas.

Today acetylene is commercially prepared by a reaction between calcium carbide and water in a generator, or as a by-product of petrochemical processes. For the calcium carbide and water reaction there are two ways of production (dry or wet process). The BOC facility adopts the wet process method for production.

Meeting with the challenges of today safety covetous culture and facing a declining market, you might wonder how safe is safe enough to produce acetylene from calcium carbide? You also may wonder how safe it is to store acetylene in gas cylinders?

Nitrous Oxide (N_2O): Not just a laughing matter!
N_2O is often called "laughing gas" because, when it is inhaled in small quantities, it causes euphoria and laughter. N_2O is commonly used as an inhaled medical anaesthetic and analgesic (painkiller) gas and as such is regulated by local medical authorities. There are also applications in the food industries where additional local regulatory requirements apply.

Today N_2O is not just a laughing matter! It is used in the high-tech thin film industries of semiconductor and LCD display manufacturing. The primary application is the reaction with silane or other silicon precursors to produce high-quality oxide films, which are used as electrical insulators in microelectronic transistors. N_2O is increasingly used to make thin-film oxides with other elements like titanium, aluminium, magnesium, indium, and zirconium and is also used in the selective etching of semiconductor thin-films.

N_2O is produced commercially by heating ammonium nitrate to an optimum decomposition temperature inside a reactor. Raw N_2O gas is then passed through a series of purification and liquefaction steps, then batching and storage for filling gas cylinders and road tankers. Process safety from the precursor to the finished product is paramount. BOC N_2O production facility is having SIL2 rated. It is also the only N_2O production facility in entire south pacific region.

Sign up for the site tour and find out the answers to these and many other questions.

PPEs required are of steel capped shoes/boots, long sleeves and long trousers, eye and ear protection and Hi-vis vest. There are limited number of safety shoes available for students (booking required). Ear plugs, safety goggles and Hi-vis vests will be provided at signing in. Photographs are NOT allowed.

VENUE
BOC Sydney Operations Centre
428 Victoria Street
Wetherill Park NSW 2164

DATE & TIME
Tuesday 30 May 2017
5.30 pm for a 6.00 pm start tour

TRANSPORT
4:30pm sharp mini bus depart from 8 Thomas Street Chatswood (outside EA office) – booking is required

Light refreshments will be provided at conclusion

TICKETS (incl. GST)
EA Members & Students: Free
Non-members: $30

REGISTRATIONS CLOSE
COB Tue 16 May 2017

REGISTER NOW