



HAZI.d

Hazardous Industries
Newsletter
Aug. 2020

Chair's Update

I wish I could say this will be a COVID free zone, but sorry no luck with that. This year's planned conference was cancelled. It seems we have to face a future reality that means face to face meetings and groups networking will not be with us for some time.

As an alternative, we embraced the online world and kicked off the Hazardous Industries Group webinar programme. Many thanks to the hundreds that attended and those who have post-event streamed it from the IOSH site.

Ian Travers did us proud. An excellent session that examined key elements of process safety and challenged the audience to think about the use of outcomes to focus on ensuring all the elements of a process safety management systems are functioning correctly. Following popular demand, Ian will return in the Autumn.

Our intention is to build a programme that follows the route of process safety from initial hazard identification and risk, through operational controls and barriers to management systems, incidents and investigations. Regular webinars and information sharing, will lead towards a conference that ties together the information in an engaging interactive session.

So keep an eye on developments and please engage with us through our LinkedIn and Twitter feeds.

Beirut

A tragedy, a disaster!!!! call it what you will but as always when something really bad happens it serves as a wake up call. Our thoughts are with the families and communities suffering in the aftermath.

What makes this situation so terrible, from a safety professional prospective, is that it is a well known phenomenon. If, as seems likely, Ammonium Nitrate is the agent at the heart of the explosion then history is littered with so many cases involving devastation and mass fatalities.

Our challenge must be to find new ways to share our knowledge and encourage a culture of change across all organisations in order to ensure a high value is placed on hazard identification and risk control and mitigation?

Next Webinars

This is subject to change but our aim is to run the following webinars:

Early September (date to be agreed):
"Enhancing Safety through Business Continuity and Organisational Resilience."

The session will examine the principles of Business Continuity, and review how the tools and techniques can be applied across hazardous industries in order to enhance safety.

Going forward in to Autumn, Ian Travers will continue his series on Process Safety Management and Chris Green will be taking us through a session on how regulators and prosecutors respond to incidents and what that means to us as safety professionals.

Back to Ammonium Nitrate the HSE website (www.hse.gov.uk) provides free access to INDG 230 for storage and handling together with a self-help checklist. OSHA have a safety and security guideline and the Agriculture industries confederation have a detailed guide on its storage and handling www.agindustries.org.uk

In any detonation the reaction rates are extremely fast; the reaction front travels at a supersonic speed with generation of a shock wave. The detonation velocity for Ammonium Nitrate has been quoted in literature to be as high as 5km/sec (velocity at which the shock wave front travels through a detonated explosive). Although this does vary according to the source and, I must admit that 1 to 3.9 km/s seems a more likely range. However the presence of hydrocarbons and other contaminants can increase the velocity. Its TNT equivalence is recorded as 56%.

The blast wave creates a peak pressure which impinges on people and structures, but it's not as simple as the movie industry portrays. This peak pressure decays back to atmospheric pressure and then a negative pressure phase occurs. To assess the impact on structures we need to take in to consider the reflective pressure, which takes in to account the angle of the peak wave as it strikes the structure. The reflective pressures can be significantly higher than the peak pressure. To find out more google Explosive Blast – FEMA.

Contamination is a really important issues here we quote information from; Yara (<https://www.yara.co.uk/crop-nutrition/fertiliser-handling-and-safety2/fertilizer-security-and-safety/>):

Handling of spillage and reject material containing Ammonium Nitrate - Spillage from conveyor belts or from bags should be collected quickly, handled and sold as normal product if free from contamination and meeting the requirement of the fertiliser regulations.

If not, the material shall be dissolved or be made inert. If seriously contaminated, product should be treated as a waste material, and hazardous material should be handled according to local legislation.

In terms of legislation many countries of national regulations For Europe In addition to the CLP Regulation (Classification, Labelling and Packaging) in Europe, storage of ammonium nitrate containing fertilisers are regulated under the COMAH (Seveso) directive. Some European countries like Germany and France have additional national regulations, TRGS in Germany, Code de l'environnement in France, controlling the storage of these products. These types of national regulations are becoming more common and need to be checked locally.

For the UK this includes NAMOS: <https://www.yara.co.uk/crop-nutrition/fertiliser-handling-and-safety2/fertiliser-stewardship/namos/>

Specialist training in responding to an incident should be provided, Here are some references to Fertilizers Europe guidance on storage, decomposition and firefighting. These are the industry standards that are commonly referenced by fertilizer producers for ammonium nitrate.

https://www.fertilizerseurope.com/wp-content/uploads/2019/08/Fire_guidance_2.pdf

We welcome a new Committee Member

Jayandran “Jay” Mohan joins the committee, he brings a background in plant operations and EHS to the team with additional specialist knowledge in occupational health and training.

Based in Oman, Jay will help us to keep an eye on the international aspects of developments in safety



[https://www.fertilizerseurope.com/wp-content/uploads/2019/08/Guidance for the storage handling and transportation of solid mineral fertilizers.pdf](https://www.fertilizerseurope.com/wp-content/uploads/2019/08/Guidance_for_the_storage_handling_and_transportation_of_solid_mineral_fertilizers.pdf)

Call for Support

We would also like to hear from members who would be willing to help us. We aim to establish within our Group a network of people who are willing to share experience and answer the questions on any technical queries, if you can help then please drop us an email at IOSH for the attention of Alison our relationship manager: Alison.Nicolson@iosh.com

Databases

The following incident databases may be of interest to those seeking examples for case studies or stories to share. (All are in English or claim an English language area)

eMars <https://emars.jrc.ec.europa.eu/en/emars/content>

CSB <https://www.csb.gov>

Process NET https://processnet.org/en/incident_db.html

Aria <https://www.aria.developpement-durable.gouv.fr/?lang=en>

RISCARD <https://r2.aist-riss.jp/?lang=en>

We aim to start a series of posts on past incidents on the LinkedIn page IOSH_Hazardous Industries group please link with us and join in.