**NEWS ARTICLE**

Bespoke fire-risk systems for agri and food processing

**07 February 2023:** Fire engineering specialist [ASP Fire](http://www.aspfire.co.za) highlights its specialised expertise in the agri and food processing industries. “In creating a bespoke system for any new or operational businesses, we look at each risk area and ask what it is we need to do to mitigate this particular risk,” explains ASP Fire CEO **Michael van Niekerk**.

The company’s risk mitigation systems comply with the NFPA 36 standard for several solvent extraction plants in terms of fire prevention and suppression. Compliance is vital to save lives, reduce the costs of fire damage, and protect equipment and buildings from major damage.

“We install the best systems possible and ensure compliance with national and international fire safety standards. This includes sign-off from insurance companies and local authorities to safeguard people and property,” highlights van Niekerk.

The company’s track record includes completing rational designs for solvent extraction plant clients operating sunflower and soya seed processing facilities in the Limpopo Province, North West Province, Gauteng and Mpumalanga. An initial oil rich mash or cake is formed and then the oil is extracted using a hexane solvent process. This highly flammable solvent that extracts the oil from the meal is then removed from the oil by a drying process.

The two major risk areas here are the preparation and solvent plant buildings, each around six storeys high, which makes escape for any occupants in the event of a fire a massive challenge. When the product starts to burn, it does so rapidly, which calls for fast-acting fire suppression.

The last part of the process is storing the dried meal, where there is a lot of airborne dust. This creates an explosive atmosphere that can be ignited by a single spark, posing a potentially far greater fire risk than the hexane plant itself. There is also crude oil storage that is not flammable but combustible.

One of the biggest risks in industries that use solvents such as hexane is the so-called BLEVE phenomenon, an acronym for Boiling Expanding Liquid Vapour Explosion. A hexane tanker could be up to 42 m3 in size, so an incident such as brake failure can quickly become a tanker fire. This is evident in the recent gas tanker explosion in Gauteng where 41 people died.

Mitigating the overall fire risk associated with tankers and refinery structures calls for a high-velocity deluge system over the solvent tankers at the refuelling point. As the solvent is highly flammable, any fire must be put out to avoid a BLEVE event.

Another project at a leading Mpumalanga macadamia nut processing company called for compartmentalisation, safety distances, access routes and installation of a fire-detection system. Macadamia nuts have a high fat content of 70%, which is a major fire risk in any processing facility.

Macadamia nuts are supplied in bulk by farmers and go through an initial drying process. Thereafter, the nuts are shelled and sorted before a second drying process and reaching the packaging area. The processing facility is large, meaning product must be moved from section to section by conveyor belts. Having the opportunity to design the system from scratch allowed ASP Fire to take all factors into consideration without having to remove existing systems.

Interlocking, the automatic shut-off of certain processes, is used to control the spread of any potential fire. The bulk conveyors that move from one section to the next generally pass through the firewalls, which means the firewalls themselves must be sealed off in the event of a fire to stop any combustible product moving from one enclosure to another.

“We design the most comprehensive set of solutions, using the most advanced methods and equipment available. Insurers and local authorities certify that we have addressed all necessary regulations and that all our work complies with the strict standards governing that specific industry. Then it is about constant vigilance and inspections, caution on the part of by all personnel and knowing how to avoid the unimaginable,” concludes van Niekerk.

**Pull quote**

“We install the best systems possible and ensure compliance with national and international fire safety standards.” – **Michael van Niekerk**, CEO, ASP Fire

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#ASP Fire has specialised expertise in agri, food processing. It creates bespoke system for any new or operational businesses in terms of risk mitigation.

***Ends***

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**Notes to the Editor**  
To download hi-res images for this release, please visit <http://media.ngage.co.za> and click the ASP Fire link to view the company’s press office.

**About ASP Fire**  
ASP Fire operates across the entire African continent from its Gauteng base, providing professional, accredited fire risk management and support to its clients. ASP Fire designs, installs, and maintains a full range of fire detection and suppression equipment suited to clients’ needs. ASP Fire provides a holistic, proactive, and preventative fire solution based on integrated fire risk assessment, training, and consulting, with the installation and maintenance of fire detection and suppression systems that meet SABS, NFPA, FPASA, and SAQCC standards.

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