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**HM Inspectors of  
Health and Safety  
(Explosives)**

A large rectangular area filled with a complex, abstract geometric pattern of overlapping triangles in various shades of red, pink, and purple. The text 'Similar risks, different faces' is centered in white over this pattern.

**Similar risks,  
different faces**

**The graveyard shift!**



## What have we been looking at to date?

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- Ammonium Nitrate storage and processing
- Storage of explosives
- Manufacture of explosive substances
- Manufacture of explosive articles
- Licensing

A mixture of planned and reactive visits.

## **The Explosives Industry | What did we expect?**

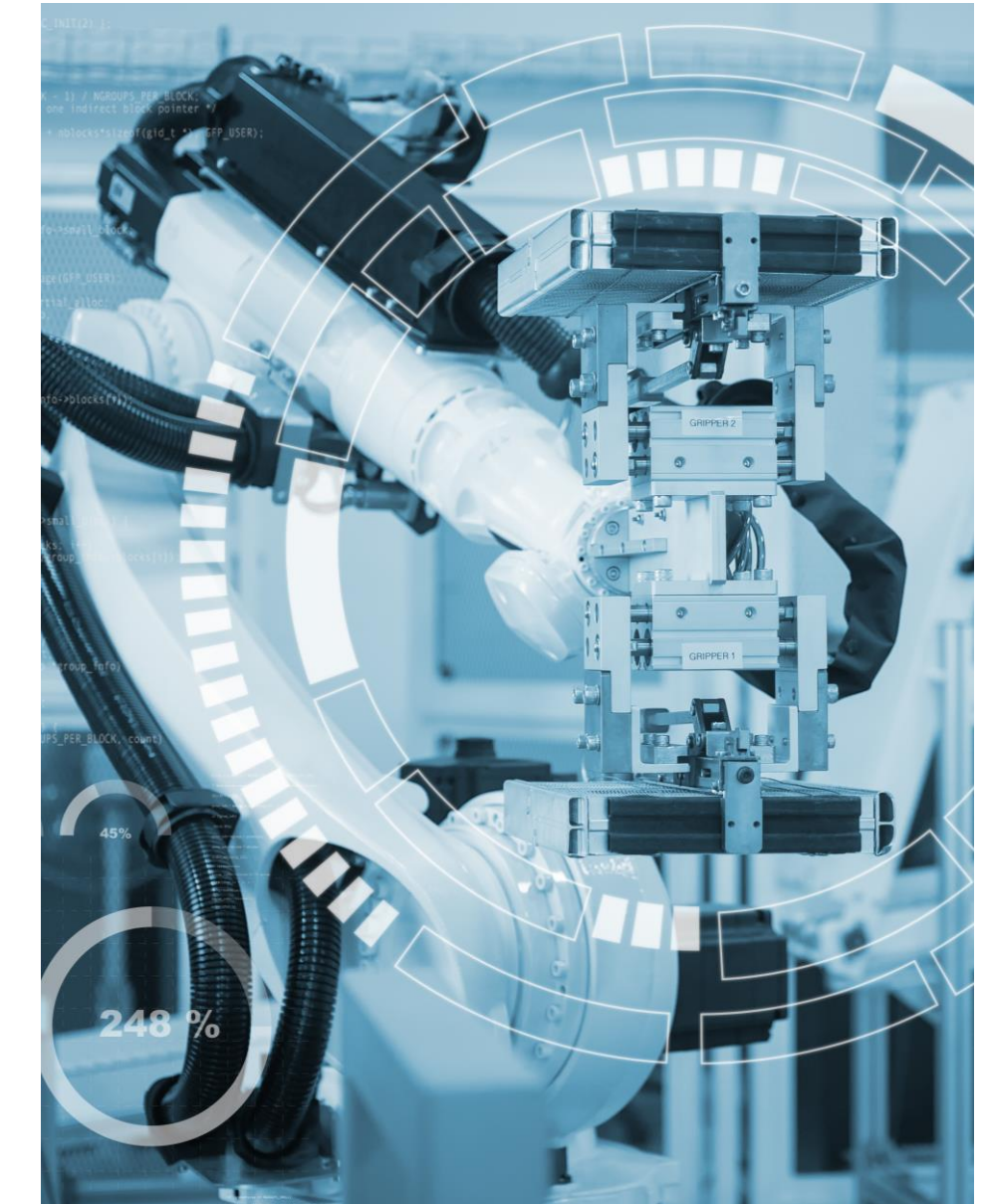
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Clean room  
Laboratories



Lots of glassware



State of the art  
manufacturing  
methods

## **What did we find?**

## A very broad/diverse industry.

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- “Little Mesters” to very large companies with a broad range of skills, knowledge and experience.
- Activities ranging from hand mixing and assembly to massively automated production lines with fully tested engineering controls.
- More stakeholders than we are used to e.g. Police

Everyone seems to know everyone else!



## Caveat

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- Our observations on the industry have been shaped by a number of ongoing issues and evolving work driven by recent events.
- That may make us sound unduly pessimistic!

General point. Inspectors are never “happy”!



## **The explosives industry – Early observations**

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- An industry in decline which has been subject to a significant lack of investment
- Historical manufacturing processes which have changed little over the years
- Ageing infrastructure; buildings often not fit for purpose and sometimes in a poor state of repair
- An ever-decreasing circle of experienced people working in key roles within the industry
- A general decline in explosives competence as experienced people leave and cannot readily be replaced



## **The explosives industry – Early observations**

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- The general decline in explosives competence is of serious concern as it allows poor practice to develop and remain unchecked.
- The level of “actual” risk is not fully appreciated
- Risk assessments are often not suitable and sufficient
- Safe Systems of Work are often inadequate to control the risks
- Operators training is inadequate as a result
- Operators' competence to do the job is compromised



**Myth number 1 - We manufacture explosives therefore the Dangerous Substances and Explosive Atmosphere Regulations 2002 (DSEAR) doesn't apply.....**

This simply isn't true. Although some discrete parts of DSEAR do not apply to explosive manufacture, the bulk of the regulations still do.

From our experience, this is not well understood within the explosives industry and results in processes that are poorly risk assessed and lacking in suitable controls to prevent and /or mitigate an incident.

# Does DSEAR apply? Are explosives a “dangerous substance”?

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Let's look a bit more closely:

## 2. Interpretation

In these Regulations -

**“dangerous substance”** means -

(a) substance or mixture which meets the criteria for classification as hazardous within any physical hazard class as provided for in the CLP Regulation, whether or not the substance is classified under that Regulation;

(b) substance or mixture which because of its physico-chemical or chemical properties and the way it is used or is present in the workplace creates a risk.

## Does DSEAR apply?

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### Application

3.(2) - Regulations 5(4)(c), 7 and 11 shall not apply to -

(d) the manufacture, handling, use, storage and transport of explosives or chemically unstable substances;

## Does DSEAR apply?

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### Risk assessment

5. - (1) Where a dangerous substance is or is liable to be present at the workplace, the employer shall make a suitable and sufficient assessment of the risks to his employees which arise from that substance

(4) Where the employer employs five or more employees, the employer shall record the significant findings of the risk assessment as soon as is practicable after that assessment is made, including in particular—

5(4)(c) relates to “zoning” of flammable atmospheres and is therefore not considered applicable to explosives

## **Does DSEAR apply?**

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### **In addition**

#### **Places where explosive atmospheres may occur**

7. -(1) Every employer shall classify places at the workplace where an explosive atmosphere may occur into hazardous or non-hazardous places in accordance with paragraph 1 of Schedule 2 and shall classify those places so classified as hazardous into zones in accordance with paragraph 2 of that Schedule; and that Schedule shall have effect subject to the notes at the end of that Schedule.

#### **Duty of co-ordination**

11. Where two or more employers share the same workplace (whether on a temporary or a permanent basis) where an explosive atmosphere may occur, the employer responsible for the workplace shall co-ordinate the implementation of all the measures required by these Regulations to be taken to protect employees from any risk from the explosive atmosphere



**Myth number 2: It's only HT4, therefore it's safe.**

*Hazard Type 4: "...an explosive which, as a result of, or as a result of any effect of, the conditions of its storage or process of manufacture, has a fire hazard or slight explosion hazard, or both, with only local effect".*

- Could a HT4 event in a small working area still result in a significant injury or fatality?
- Potentially a lower risk of a major incident due to localised nature of an event but could easily communicate to other explosive compositions leading to a major hazard?
- When it comes to assessing and controlling risk is a single serious injury or fatality acceptable?
- Potential for complacency due to failure to understand the "actual" risk.

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## **Importance of good housekeeping**



**And again...**

**Myth number 3: My explosive licence says I can store or manufacture up to 1000Kg, therefore it is “safe” to have up to 1000Kg.**

Well, it depends.....



The process of explosive licensing is based around separation distances to vulnerable and occupied buildings and accepts a level of tolerable risk.

However, it does not disapply the requirements of ER2014 which still requires dutyholders to adopt the basic principles of good explosive practice.

# Explosives Regulations 2014

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## Regulation 26: Fire and explosion measures

**26.** - (1) Any person who manufactures or stores explosives must take appropriate measures —

(a) to prevent fire or explosion;

(b) to limit the extent of fire or explosion including measures to prevent the spreading of fires and the communication of explosions from one location to another; and

(c) to protect persons from the effects of fire or explosion

**Other issues**



## **The explosives magazine lottery.....**

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What's in my magazine?

Should be easy right?

Your explosives license tells you:

- What you can store
- How much you can store
- Where you can store it

Magazines should be fit for purpose, clean, well organized and subject to high levels of housekeeping so that the magazine can be accessed and egressed safely, and stock levels can be easily checked and audited

## **The explosive magazine lottery.....**

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But what do we find? How do you audit this?

And this is the easy bit!!

## The explosive magazine lottery..... What else?

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- Magazines in a poor state of repair
- Poor housekeeping, broken pallets, poor organization.
- Lots of dust and debris
- Rust, rust and more rust!
- Incompatible storage of explosives
- Unsafe working practices i.e. picking in a magazine
- A general lack of understanding of how things should be done.

**What does good look like?**



# Explosives Regulations 2014

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There appear to be two extremes:

1. Focus on the explosive risk at the expense of other “obvious” health and safety risks with a higher likelihood of an incident.
2. Over familiarity with the compositions being manufactured and handled drives a culture of complacency to the risks.



## Where do we end up taking enforcement action?

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Explosives regs of course, but also:

- General requirements of HASWA 1974 & MHSWR 1999 – Safe plant, systems of work, information, instruction, training & supervision and not forgetting Risk Assessment!
- COSHH – Exposure to hazardous substances
- DSEAR – Exposure to Dangerous substances and explosive atmospheres & Risk Assessment again!!
- PUWER – Is the work equipment provided safe and suitable to use
- LOLER – Lifting Operations; are they planned, are people competent etc
- Work at Height / Transport / Control of contractors / Noise / Vibration / Manual handling etc
- Welfare

# Managing Performance and where does it go wrong? HSG65

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**PLAN**



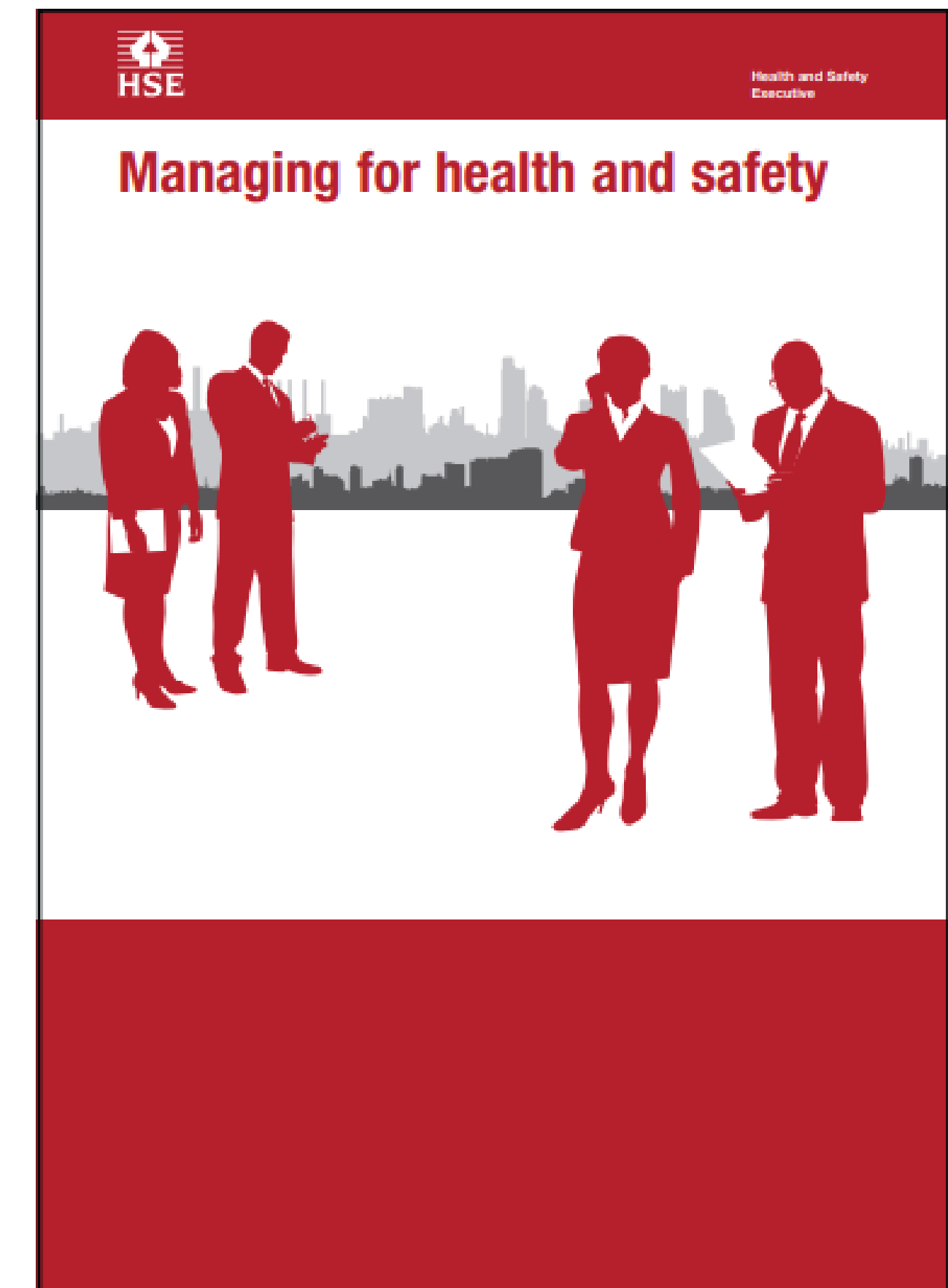
**DO**



**CHECK**



**ACT**



First published in 1991 – This is not a new concept!

## **Question for the industry**

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**After all the time money and resource spent on understanding and risk assessing your processes and training your employees; do you really know:**

- **If your employees understand ALL the risks they face**
- **If they understand the controls that must be in place to mitigate these risks**
- **If safe working procedures are being followed consistently**
- **If the levels of supervision provided are adequate and effective**
- **If risks are being managed effectively**

**And depending on your answers to these questions:**

- **If their training and levels of competence are sufficient to ensure their health and safety is protected.**

## The future: What does it hold?

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- We live in a very different world to that of 18 months ago.
- As such, there is now an immediate need to invest in the field of explosives and develop new, state of the art methods to enable their large-scale manufacture.
- Change is coming and it is heading our way very quickly!
- There are both exciting and challenging times ahead.

But

- We are all in this together!!

# Relevant guidance

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[Explosives Regulations 2014: Guidance on Regulations - Safety provisions L150 \(hse.gov.uk\)](#)

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[Explosives Regulations 2014: Guidance on Regulations - Security provisions L151 \(hse.gov.uk\)](#)

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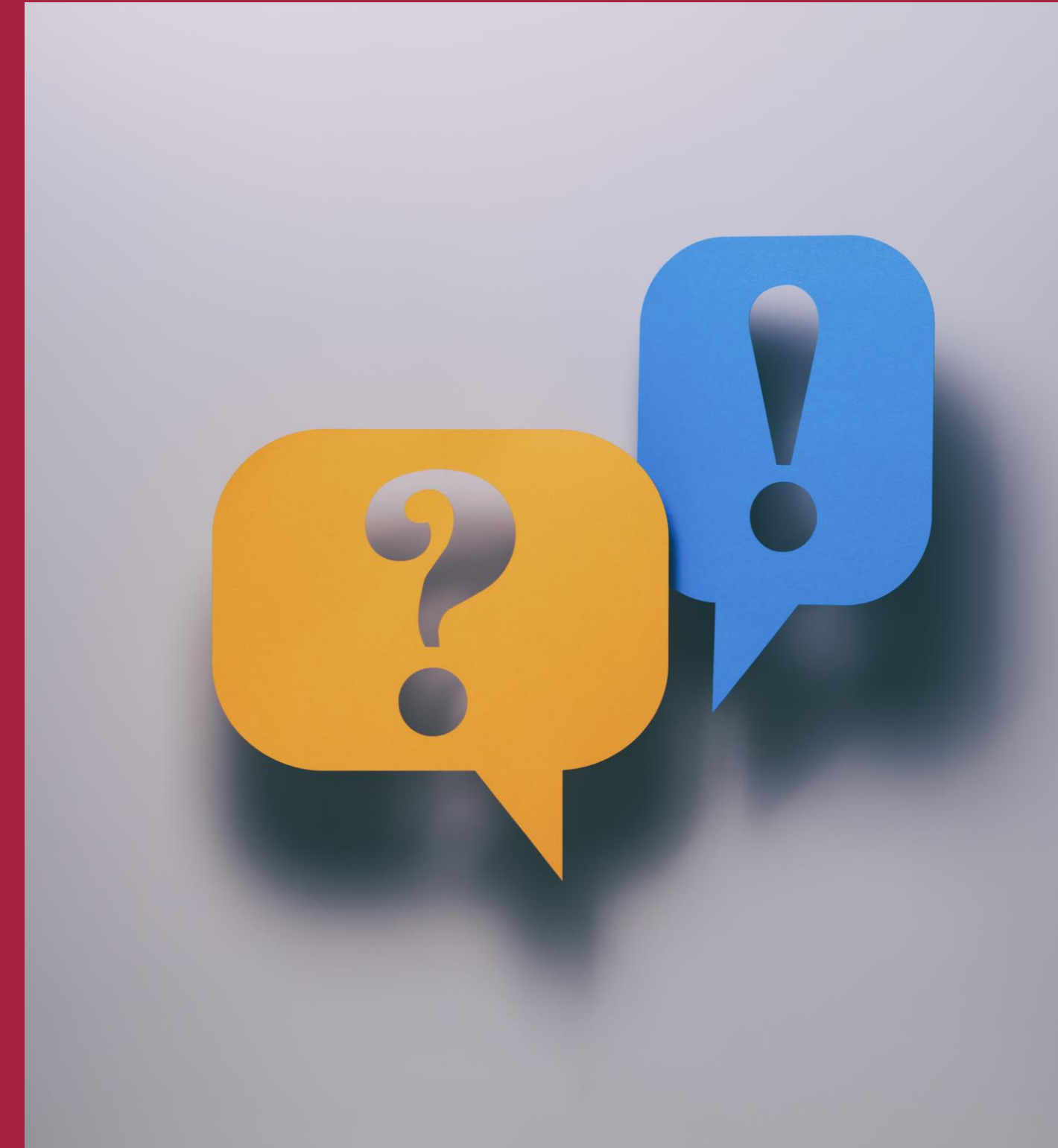
Fireworks - [Microsoft Word - Explosives Policy - ER2014 - Fireworks in retail premises SSG - updated - September 2015 - CLEAN \(hse.gov.uk\)](#)

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[HSE Explosives - Frequently asked questions](#)

# Questions?

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PROTECTING PEOPLE  
AND PLACES



[explosive.enquiries@hse.gov.uk](mailto:explosive.enquiries@hse.gov.uk)

**Thank you**

A large graphic consisting of several concentric, dark grey circles on a black background. The words 'The End' are written in a white, elegant script font across the center of the circles.

*The End*