

Demonstration Risk Assessment Form

**SCIENCE IN SCHOOLS- EXPLOSIVE FOOD SHOW**

**This 50-60min long show and contains the following demonstrations:**

1. Burning Jelly Babies
2. Cinnamon Taste Test
3. PTC Test
4. Jumping
5. Bread Man
6. Flour Fireball
7. Digestive System
8. Mentos and Coke fountain
9. Flour Paint Tin

Likelihood		Severity of impact		Current risk
Certain	5	Death or total destruction	5	<b>Multiply Likelihood and Severity of impact to get Current Risk rating</b>
High	4	Major injury or damage	4	
Medium	3	Serious injury or damage	3	
Low	2	Minor injury or damage	2	
Very low	1	Negligible	1	

Action Rating	
<b>10 and above</b>	<b>The work is too dangerous and should not be undertaken</b>
<b>8 or 9</b>	The work is high risk. Those undertaking the work must be fully competent and experienced for the type of work, equipment to be used and fully understand all risks present.
5 or 6	Moderate risk Workers must be fully competent for the type of work and risks present, or under competent supervision.
4	Low risk. Those undertaking the work must be aware or be made aware of the risks and mitigation measures required.
2 or 3	Slight risk. Those undertaking the work should be aware or be made aware of the risks and mitigation measures required.
1	Insignificant risk. Activity suitable for all workers

**ACTIONS NEEDED BY VENUE:**

1. Isolate Smoke/ Fire Alarms in vicinity of demonstrations
2. Ensure 1 x Fire Extinguisher is on Stand-by (only to be used in emergencies- should be either dry powder, carbon dioxide or water spray (not jet))
3. Ensure presenter knows Fire Evacuations procedures

4. Ensure presenter knows location of nearest fire extinguishers
5. To inform presenter/ Ri (at least 24hr prior to performance time) if any of the attendees suffer allergies to latex

**Risk assessed by: Ted Hill**

**Date of last review: July 2025**

**Review date: July 2026**

### Demonstration 1: Burning Jelly Baby

**Method:** Approximately 5-6 spatula fulls of potassium chlorate, an oxidizing agent, is placed into a boiling tube in a laboratory clamp and stand. It is then melted and kept warm, but below its boiling point, with a blowtorch. Once melted, a jelly baby is put into the tube so that it drops into the molten potassium chlorate. It reacts violently with a shrieking noise, creating a bright light and lots of smoke. The blowtorch used will be fuelled with either Butane or a high temperature gas mix (MAP gas). To save the safety screen needing frequent replacing, cheaper acrylic ‘inserts’ will be provided, which can be attached onto the safety screen via clips. Note: when referring to butane it also applies to a butane/ propane mix.

Those at risk	Ri Staff	On-Stage Volunteers	Audience	Non-Ri Workers	Others
	Y		Y		

#### PPE Requirements

Item	Item	Item	Item
Flameproof overalls	Gloves contact	Y	High visibility
Hardhat	Dust Mask		Gloves chemical
Hearing protection	Mask chemical vapour/mist		Safety shoes
	Laboratory Coat		Eye protection
			Y

Hazards and risks	Mitigation	Likelihood	Severity of Impact	Current Risk
Eye injury via multiple possible causes, including sparks, flames, and broken glass.	Eye protection must be worn throughout.  A safety screen is in place to protect audience members.	1	4	4
A relatively large amount of smoke is produced, which could cause respiratory irritation. (Note: the smoke is burnt sugar)  The smoke may also set off fire alarms.	The demonstration should be performed only in a well-ventilated environment and with audience members well clear (at least 3 metres).  Smoke detectors in the same room should be isolated from the fire alarm system if possible (note: Not a safety concern, but a matter of convenience)	4	1	4
All or some of the jelly baby may be ejected from the boiling tube during the reaction, causing burn injury or start a fire.	The reaction must be performed behind a 3-sided polycarbonate screen, with the boiling tube directed so any flaming debris will strike the screen and be contained.  An exclusion zone is to be created, with audience members at least 3 meters away	2	3	6

	<p>from the reaction.</p> <p>The clamp and stand must be secure and stable, and the whole demonstration space within the safety screen protected with heat-proof ceramic mats. Flammable materials must be kept well clear.</p> <p>If any material does escape the tube, it should be left to burn itself out on the ceramic mats. If the material escapes beyond the ceramic mats, it can be extinguished with a CO<sub>2</sub> fire extinguisher, which must be on hand.</p> <p>Molten jelly baby should not be touched with bare hands.</p>			
The flame produced may cause burn injury	<p>Heat proof gloves can be used for inserting the jelly baby, unless the gloves compromise dexterity, in which case they would add more risk. Or metal tongs/tweezers can be used to drop the jelly baby into the tube, equally, if trained on how to do so, bare hands can be used, while ensuring no part of the hand or arm passes over the opening of the boiling tube (this is presenter dependent).</p> <p>The boiling tube will be angled slightly such that the jelly baby slides into the potassium chlorate, giving time for the presenter's hand to clear the area. Presenters are to be correctly trained and be confident in performing the demonstration.</p>	2	2	4
The tube will become extremely hot (around 400°C or more) it will remain hot for some time after the demonstration, risking burning injury.	<p>The tube nor its contents is to be touched during, or immediately after the demonstration. The whole clamp stand can be moved safely by holding the retort rod at the top. Heavy, heat-proof gauntlets should be worn to handle the boiling tube in the unlikely event it is necessary to do so.</p>	2	2	4
The tube may crack during the process, releasing its contents below.	<p>The reaction must be carried out on ceramic mats. If the tube breaks, the contents should be allowed to burn out and cool in situ.</p> <p>If the potassium chlorate drops whilst still in powder form, carefully gather up and place in another boiling tube and burn off using another jelly baby.</p> <p>Spilt potassium chlorate should not be returned to the bottle.</p>	2	2	4

<p>The blowtorch creates a fire hazard.</p>	<p>The blowtorch must only be used by people trained and familiar with their correct use. The flame must only be on for as long as necessary. The blowtorch must be removed as soon as the potassium chlorate is ready, and just before adding the jelly baby to the tube, and switched off immediately.</p>	3	2	6
<p>Incorrect handling of potassium chlorate can cause skin and eye irritation, acute toxicity, or a fire/explosion.</p> <p>Potassium Chlorate is an oxidizer, UN1485 therefore precautions must be taking according to the MSDS: <a href="https://shop.wf-education.com/media/data-sheets/P/O/PO4840_en_GB_4f4b.pdf">https://shop.wf-education.com/media/data-sheets/P/O/PO4840_en_GB_4f4b.pdf</a></p>	<p>Nitrile gloves and goggles will be worn when dispensing the potassium chlorate into the test tube. It will be kept away from food, and hands thoroughly washed before food consumption.</p> <p>All presenters to be familiar with the MSDS.</p>	2	3	6
<p>Incorrect storage of potassium chlorate can cause skin and eye irritation, acute toxicity, or a fire/explosion.</p>	<p>Ri to ensure that potassium chlorate will be sourced from a reputable supplier</p> <p>It will be stored and transported within a sealed container (ideally the one it is supplied in) and separate to fuel sources. The lid can be sealed with tape to ensure it doesn't leak.</p> <p>The container will be labelled with the chemical name (Potassium Chlorate) and the appropriate Hazchem information</p> <p>It will always be stored and transported in weights of 1kg or less (mostly even less than 500g)</p> <p>Transport by Land and Sea required no special conditions if quantity is kept to 1kg or below.</p> <p>It will be stored in a cool, dry, well-ventilated area, and kept away from sources of heat, radiation, static electricity and food.</p> <p>As a further precaution it will be 'double' boxed i.e. kept in a box within a box such that if a spill occurs in the first, the second will catch the spill. Ideally, this box will be lockable, so if left unattended the potassium chlorate cannot be accessed by others.</p>	2	3	6
<p>Incorrect disposal of potassium chlorate can cause fire/explosion, or cause environmental damage</p>	<p>Allow reaction to complete before discarding boiling tube and its contents in domestic general waste (the ratios used in this reaction should be such that all chlorate will have reacted with the jelly baby)</p>	1	1	1

<p>Incorrect use of butane and butane/propane mix can cause fire/explosion.</p> <p>The gas used will be from domestic canisters: UN 2037</p> <p>Safety data sheets can be found here;</p> <p>Butane:  <a href="http://www.farnell.com/datasheets/1801831.pdf">http://www.farnell.com/datasheets/1801831.pdf</a></p> <p>Butane/ Propane mix:  <a href="https://www.unitedindustrial.co.uk/uploads/files/348856.pdf">https://www.unitedindustrial.co.uk/uploads/files/348856.pdf</a></p>	<p>Butane should only be used in a well-ventilated space.</p> <p>Goggles will be worn when using the blowtorch.</p> <p>The butane used is available domestically, it is used as a lighter refill, however it should still be treated with respect. It will be sourced from a reputable supplier and canisters inspected for damage before use.</p> <p>Butane should be extinguished using oxygen restriction, or in an emergency, either dry powder or carbon dioxide extinguishers can be used.</p>	1	4	
<p>Incorrect storage and transportation of butane and butane/propane mix can cause fire/explosion.</p>	<p>It will be stored in a non-conductive box at a temperature below 50°C and away from sources of ignition.</p> <p>There will be a maximum of 8 canisters stored at one point, but mostly only 4, unless a high number of shows are needed.</p> <p>Due to the butane being domestic canisters and the small volume carried/stored, no special license or labelling is needed.</p> <p>Ideally the box containing the butane will be lockable, so if left unattended the gas cannot be accessed by others.</p>	1	3	3

### Demonstration 2: Cinnamon Taste Test

**Method:** Volunteers are given a ‘mystery powder’ (cinnamon) in a paper ramekin. They are then asked to pinch their nose and place a small amount of it in their mouths. They are then instructed to release their noses, and they will be able to detect the cinnamon flavour.

Those at risk	Ri Staff	On-Stage Volunteers	Audience	Non-Ri Workers	Others
	Y	Y			

#### PPE Requirements

Item	Item	Item	Item
Flameproof overalls	Gloves contact	High visibility	Waterproof clothing
Hardhat	Dust Mask	Gloves chemical	Y Wellington boots
Hearing protection	Mask chemical vapour/mist	Safety shoes	
	Laboratory Coat	Eye protection	

Hazards and risks	Mitigation	Likelihood	Severity of Impact	Current Risk
There is a risk of contracting communicable diseases when handling and consuming the cinnamon	<p>Presenter to dispense a small amount of cinnamon using a spoon into a clean paper ramekin before the show. If touching the cinnamon is unavoidable, gloves should be worn.</p> <p>The ramekins are to be placed on a plate for the volunteers to take, to minimise handling.</p> <p>Paper ramekins are to be disposed of after each use.</p>	2	2	4
Volunteers may have allergic reaction to cinnamon.	Presenter must clearly ask volunteers if they have any food allergies. Those with allergies are not allowed to take part (it may be necessary to ask for teachers’ help in choosing a volunteer).	1	3	3
Volunteers may swallow too much cinnamon which would make them feel unwell, or	<p>Only a small amount of cinnamon is provided in each paper pot.</p> <p>Have drinking water on hand to wash out</p>	2	1	2

present a choking hazard	mouth of volunteers if necessary.			
The unpleasant taste of cinnamon may cause nausea for some, or cause choking.	Have drinking water on hand to wash out mouth of volunteers if necessary.	1	1	1

**Demonstration 3: PTC Taste Test**

**Method:** Six or more volunteers are selected from the audience and asked to place one or two differing strips of paper on their tongues, one at a time. One strip is a control (a plain strip of paper). The other strip is one that is impregnated with PTC (Phenythiocarbamide). Different people with different phenotypes will be able to taste the PTC differently.

Those at risk	Ri Staff	On-Stage Volunteers	Audience	Non-Ri Workers	Others
	Y	Y			

**PPE Requirements**

Item		Item		Item		Item	
Flameproof overalls		Gloves contact		High visibility		Waterproof clothing	
Hardhat		Dust Mask		Gloves chemical	Y	Wellington boots	
Hearing protection		Mask chemical vapour/mist		Safety shoes			
		Laboratory Coat		Eye protection			

Hazards and risks	Mitigation	Likelihood	Severity of Impact	Current Risk
The volunteers may inadvertently swallow the pieces of paper, leading to a choking hazard	Presenter must clearly instruct volunteers to place paper on the tongue without closing their mouths, or swallowing. Provide container for volunteers to throw away used pieces of paper or volunteers to place straight into a provided bin.	1	2	2
The unpleasant taste of PTC may cause nausea for some.	Have drinking water on hand for those who may find the taste particularly unpleasant.	1	2	2
There is a risk of contracting communicable diseases when handling.	Presenter to wear gloves at all times while handling the PTC or/and to use tweezers when transferring PTC pieces to volunteers. PTC strips to be spread out on a plate or placed into individual ramekins, so they are only touched by the participant.  Volunteers to place both strips into the bin directly; no one else is to touch a strip (unless they're wearing gloves).	2	2	4



**Demonstration 4: Jumping**

**Method:** A member of the audience is brought onto stage as a volunteer. The rest of the audience stands (if they are able to) and are instructed to jump 10 times by the volunteer.

<b>Those at risk</b>	Ri Staff	On-Stage Volunteers	Audience	Non-Ri Workers	Others
	Y	Y	Y		

**PPE Requirements**

Item	Item	Item	Item
Flameproof overalls	Gloves contact	High visibility	Waterproof clothing
Hardhat	Dust Mask	Gloves chemical	Wellington boots
Hearing protection	Mask chemical vapour/mist	Safety shoes	
	Laboratory Coat	Eye protection	

Hazards and risks	Mitigation	Likelihood	Severity of Impact	Current Risk
Audience members may trip performing jumps	The presenter will verbally warn the audience to only stand if they are able to. If performed on the tiered seating area verbal warnings will be given to be careful about where they feet fall and, if necessary, instructed to not jump very high. Audience told to take care of footing and be aware of people around them when jumping, so as not to injure people around them. Varying proportions of the audience can be used as necessary. For example, only the front row, if tiered seating isn't sturdy enough.	2	2	4

**Demonstration 5: Burning Bread**

**Method:** Bread or a piece of bread shaped into a person (using a cookie cutter) is attempted to be burnt using a blowtorch. The blowtorch will be fuelled by either butane or a high temperature gas mix. Note- when referring to butane it also applies to a butane/propane mix)

Those at risk	Ri Staff	On-Stage Volunteers	Audience	Non-Ri Workers	Others
	Y		Y		

**PPE Requirements**

Item	Item	Item	Item
Flameproof overalls	Gloves contact	Y	High visibility
Hardhat	Dust Mask		Gloves chemical
Hearing protection	Mask chemical vapour/mist		Safety shoes
	Laboratory Coat		Eye protection

Hazards and risks	Mitigation	Likelihood	Severity of Impact	Current Risk
Incorrect performance of the demo can create unwanted fires or cause burn injury.	<p>The blowtorch must only be used by people completely familiar and confident with their correct use.</p> <p>The piece of bread to burn will be held with tongs, and heat proof glove(s) will be worn</p> <p>The flame must only be on for as long as necessary.</p> <p>Presenter must have located the closest fire extinguisher prior to the start of the show and use if fire becomes uncontrolled.</p> <p>The bread will not actually ignite</p>	1	2	2

<p>Incorrect use of butane and butane/propane mix can cause uncontrolled fire/explosion.</p> <p>The gas used will be from domestic canisters: UN 2037</p> <p>Safety data sheets can be found here;</p> <p>Butane:  <a href="http://www.farnell.com/datasheets/1801831.pdf">http://www.farnell.com/datasheets/1801831.pdf</a></p> <p>Butane/ Propane mix:  <a href="https://www.unitedindustrial.co.uk/uploads/files/348856.pdf">https://www.unitedindustrial.co.uk/uploads/files/348856.pdf</a></p>	<p>When refilling blowtorch with butane, conduct in a well ventilated space.</p> <p>Blowtorch and butane will be sourced from a reputable supplier, but they should be inspected regularly for signs of damage</p> <p>Butane should be extinguished using oxygen restriction, or in an emergency, dry powder or carbon dioxide extinguishers can be used.</p>	1	4	4
<p>Incorrect storage and transportation of butane and butane/propane mix can cause uncontrolled fire/explosion.</p>	<p>It will be stored in a non-conductive box at a temperature below 50°C and away from sources of ignition.</p> <p>There will be a maximum of 8 canisters stored at one point, but mostly only 4, unless a high number of shows are needed.</p> <p>Due to the butane being domestic canisters and the small volume carried/stored, no special license or labelling is needed.</p> <p>Ideally the box containing the butane will be lockable, so if left unattended the gas cannot be accessed by others.</p>	1	3	3
<p>Incorrect use of propylene/MAP gas (high temperature gas mix) can cause uncontrolled fire/explosion.</p> <p>The gas used will be from domestic canisters: UN1077</p> <p>Safety data sheet can be found here:  <a href="https://www.airgas.com/msds/002015.pdf">https://www.airgas.com/msds/002015.pdf</a></p>	<p>Blowtorch and gas canisters will be sourced from a reputable supplier, but they should be inspected regularly for signs of damage</p> <p>Propylene/MAP fires should be extinguished using oxygen restriction, or in an emergency, dry powder or carbon dioxide extinguishers can be used.</p>	1	4	4

<p>Incorrect storage and transportation propylene/MAP gas (high temperature gas mix) can cause uncontrolled fire/explosion.</p>	<p>It will be stored in a non-conductive box at a temperature below 50°C and away from sources of ignition.</p> <p>There will be a maximum of 8 canisters stored at one point, but mostly only 4, unless a high number of shows are needed.</p> <p>Due to the propylene/MAP gas being domestic canisters and the small volume carried/stored, no special license or labelling is needed.</p> <p>Ideally the box containing the butane will be lockable, so if left unattended the blowtorch or canister cannot be accessed by others.</p>	<p>1</p>	<p>4</p>	<p>4</p>
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### Demonstration 6: Flour fireball

**Method:** A tablespoon or two of cornflour is placed in a funnel connected to a pipe. This cornflour is then blown upwards through the open flame of a blowtorch to create a short-lasting ball of fire. The blowtorch will be fuelled by butane or a butane/propane mix

Those at risk	Ri Staff	On-Stage Volunteers	Audience	Non-Ri Workers	Others
	Y		Y		

### PPE Requirements

Item	Item	Item	Item
Flameproof overalls	Gloves contact	Y	High visibility
Hardhat	Dust Mask		Gloves chemical
Hearing protection	Mask chemical vapour/mist		Safety shoes
	Laboratory Coat		Eye protection
			Y
			Waterproof clothing
			Wellington boots

Hazards and risks	Mitigation	Likelihood	Severity of Impact	Current Risk
The ball of flame may burn the face or hands of the presenter	Presenter must wear eye protection and a glove on the hand holding the funnel. They should also angle the shower head away from their face, step back as they blow into the tube.	1	3	3
The ball of flame presents a fire hazard to building, equipment and audience.	Ensure that the area around the demo is clear from all additional equipment and flammable objects.  Ensure there is sufficient room (3m) above the flame without any overhanging objects.  Presenter must not angle the funnel directly at the audience or other equipment.	1	4	4

<p>Presenter blowing into the tube may result in risk of communicable diseases</p>	<p>Presenter to perform the demonstration with an exclusion zone from audience of at least 2m.</p> <p>Presenters to have their own mouthpiece, and not allow others to use the same equipment.</p>	1	2	2
<p>Cornflour on the floor after the demo may cause a slip hazard</p>	<p>Presenter to be wary of slippery surfaces, and warn any volunteers coming up on stage of potential hazard.</p> <p>Clean up at the earliest convenience.</p> <p>Limit the amount of cornflour being blown into the air.</p>	1	3	3
<p>The open flame of the blowtorch presents a fire hazard.</p>	<p>Presenter to ensure that if the blowtorch is placed on the table while lit it is in a stable position. And also ensure that the flame is angled away from other equipment.</p> <p>The blowtorch must be turned off as soon as the demo is complete.</p>	1	4	4
<p>Incorrect use of butane and butane/propane mix can cause uncontrolled fire/explosion.</p> <p>The gas used will be from domestic canisters: UN 2037</p> <p>Safety data sheets can be found here;</p> <p>Butane:  <a href="http://www.farnell.com/datasheets/1801831.pdf">http://www.farnell.com/datasheets/1801831.pdf</a></p> <p>Butane/ Propane mix:  <a href="https://www.unitedindustrial.co.uk/uploads/files/348856.pdf">https://www.unitedindustrial.co.uk/uploads/files/348856.pdf</a></p>	<p>Goggles will be worn when using the blowtorch.</p> <p>When refilling blowtorch with butane, conduct in a well ventilated space.</p> <p>Blowtorch and butane will be sourced from a reputable supplier, but they should be inspected regularly for signs of damage</p> <p>Butane fires should be extinguished using oxygen restriction, or in an emergency, dry powder or carbon dioxide extinguishers can be used.</p>	1	4	4

<p>Incorrect storage and transportation of butane and butane/propane mix can cause uncontrolled fire/explosion.</p>	<p>It will be stored in a non-conductive box at a temperature below 50°C and away from sources of ignition.</p> <p>There will be a maximum of 8 canisters stored at one point, but mostly only 4, unless a high number of shows are needed.</p> <p>Due to the butane being domestic canisters and the small volume carried/stored, no special license or labelling is needed.</p> <p>Ideally the box containing the butane will be lockable, so if left unattended the gas cannot be accessed by others.</p>	<p>1</p>	<p>3</p>	<p>3</p>
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### Demonstration 7: Digestive System

**Method:** Various foods (3 slices of bread, 2 bananas, 1 tin of baked beans, and 2 mini chocolate rolls) are cut up with scissors into a bowl and mixed with coffee. They are then mashed together, with a few squirts of water. The mixture is then emptied into a bag, where it will be further crushed. This mixture is then emptied into a stocking, and the water pushed out from it. It is then emptied onto a towel, where it is dabbed dry and put into a study bag. The presenter then cuts a small corner of the bag and creates a 'poo' onto a clean plate/tile.

Those at risk	Ri Staff	On-Stage Volunteers	Audience	Non-Ri Workers	Others
	Y	Y	Y		

#### PPE Requirements

Item		Item		Item		Item	
Flameproof overalls		Gloves contact		High visibility		Waterproof clothing	
Hardhat		Dust Mask		Gloves chemical		Wellington boots	
Hearing protection		Mask chemical vapour/mist		Safety shoes			
		Laboratory Coat		Eye protection			

Hazards and risks	Mitigation	Likelihood	Severity of Impact	Current Risk
Allergies to food could cause allergic reactions.	Teacher is offered a chocolate mini roll or equivalent and can refuse.  Only the presenter will eat any food during this demo and can omit any ingredients that they are allergic to.	1	4	4
Incorrect use of scissors could result in injury	Very young volunteers to be handed safety scissors if necessary. Presenter to check in on volunteer's progress at regular intervals and instruct in safe use of scissors where necessary.  People cutting are not to be rushed.	3	2	6
Presenter could injure their hand when handling the can of baked beans	Presenter to tip the can into the bowl; no one is to put their hand inside the can.	1	2	2

Slip on wet floor caused by the spillages from mixture	All spillages to be wiped up at the earliest convenience, with verbal warning given in the meantime.	1	2	2
Hot coffee could spill onto presenter or volunteers, resulting in burn injury	<p>Only cold or lukewarm water to be used to make the coffee.</p> <p>Where only hot water is available/viable, the coffee is to be made well in advance of the show, and left to cool in a place where there is a low risk of it being knocked over.</p>	1	1	1

**Demonstration 8: Mentos and cola fountain**

**Method:** A tube of Mentos mints are loaded into a boiling tube with a card over the opening of the tube. The tube is upturned into a bottle of cola, with all the mints falling into the drink. This causes a build-up of gas within the bottle, leading to a fountain of cola escaping from the bottle.

Those at risk	Ri Staff	On-Stage Volunteers	Audience	Non-Ri Workers	Others
	Y	Y	Y		

**PPE Requirements**

Item	Item	Item	Item
Flameproof overalls	Gloves contact	High visibility	Waterproof clothing
Hardhat	Dust Mask	Gloves chemical	Wellington boots
Hearing protection	Mask chemical vapour/mist	Safety shoes	
	Laboratory Coat	Eye protection	

Hazards and risks	Mitigation	Likelihood	Severity of Impact	Current Risk
Slip on wet floor caused by the spillages from cola	The demonstration to be conducted within a plastic box which should catch most of the liquid from the reaction  All spillages to be cleaned up at the earliest convenience.	1	2	2

**Demonstration 9: Exploding flour tin**

**Method:** A tablespoon or two of cornflour is placed into an empty tin can, fitted with a shower head. Place six to nine candles into the can and light them. Seal the lid on and quickly taking the other end of the tube, blow heavily into the tin. The air causes the cornflour to spread out, creating a fireball inside the tin. The increased pressure inside the tin causes the lid to pop off.

Those at risk	Ri Staff	On-Stage Volunteers	Audience	Non-Ri Workers	Others
	Y		Y		

**PPE Requirements**

Item		Item		Item		Item	
Flameproof overalls		Gloves contact	Y	High visibility		Waterproof clothing	
Hardhat		Dust Mask		Gloves chemical		Wellington boots	
Hearing protection		Mask chemical vapour/mist		Safety shoes			
		Laboratory Coat		Eye protection	Y		

Hazards and risks	Mitigation	Likelihood	Severity of Impact	Current Risk
The ball of flame from the fireball may burn the face or hands of the presenter	<p>Presenter must wear eye protection and ensure that they are below the level of the can and at sufficient (0.5M) distance from the can. Heat proof gloves can also be worn if they do not compromise dexterity.</p> <p>No one is to touch the tin directly after the demonstration, unless they are wearing heat-proof gloves.</p>	1	3	3
The ball of flame presents a fire hazard to building, equipment and audience.	<p>Ensure that the area around the demo is clear from all additional equipment and flammable objects.</p> <p>Ensure there is sufficient room (at least 2m) above the tin without any overhanging objects.</p> <p>Ensure the audience are at a minimum of 3 metres from the demo equipment.</p>	1	4	4

<p>The open flame of the candles presents a fire hazard.</p>	<p>Presenter to ensure that the candles are only lit directly before the demo and that they are extinguished immediately after the demo is complete (if still alight at the end of the demo)</p>	<p>1</p>	<p>4</p>	<p>4</p>
<p>The lid from the tin presents a projectile hazard to audience and presenter.</p>	<p>The presenter must crouch so that their head is below the level of the paint tin.</p> <p>The tin will be positioned directly upright, so that when the lid fires, it travels upwards and will only be on descent that it poses a hazard.</p> <p>Presenter to ensure that there is sufficient space around the demo for the lid to fall down. Ensure the audience are at a minimum distance of 3 meters from the demo equipment.</p> <p>If it is performed under an angled ceiling it is to be ensured that tin is positioned such that the flight of the lid will not be towards the audience.</p> <p>The audience will be warned to cover their faces if the lids does fall towards them. In addition, the lid will be inspected for sharp edges with any being sanded smooth or a new lid used.</p>	<p>2</p>	<p>1</p>	<p>2</p>