SHERWOOD FOREST HOSPITALS NHS TRUST
HEALTH AND SAFETY COSHH RISK ASSESSMENT

Division	CTSO	Department/Ward	Pathology	Date	07.07.2025
Substance & Work Activity	Neutral Buffered Formalin, Tissue preservation (Includes MSDS Information and Spillage Procedure). 10% neutral buffered formalin is used for tissue sample preservation in Theatres, Endoscopy, Maternity and Histopathology. The main use of this product is within Histopathology who use a range of control measures to keep exposure to Formalin (Formaldehyde) to a minimum, including the use of down draft tables wen working on specimens. Exposure monitoring within Histopathology shows that personal exposure is well below the TWA for Formaldehyde. The main exposure for people outside of histopathology will cone from decanting any bulk Formalin into non-prefilled pots and during any spillage of formalin from a pot. Given air tests from Histopathology the exposure risk from exposures outside of Histopathology is not thought significant.				

Assessor	[redacted]	Next Review Date	July 2027
Applicable Labels and symbols			

No.	Use the MSDS sheet to Identify the hazard and who might be affected by the hazard. Identify what type or harm may occur	RAW RISK (No Control Measures)			Consider the need to use the substance is there a safer alternative, can the process be isolated, enclosed, what PPE is required.	OPERATIONAL RISK (With Control Measures			Are there any additional controls or measures that you can or do put in place to further reduce the risk.	RESIDUAL RISK (With Additional Controls)		
	Hazard (the potential to cause harm)	Probability	Severity	Risk Rating	Control Measures or Safeguards in place	Probability	Severity	Risk Rating	Observations and recommendations to improve safety	Probability	Severity	Risk Rating
1.	Irritant to eyes, skin and				Avoid any contact with the eyes after	2	3	6	If the liquid does come into contact	1	3	3

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	respiratory tract.	3	3	9	use. Use suitable Tightly fitting goggles A face shield should be worn where splashing is possible				with your eye rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, consult a specialist.			
2.	Prolonged usage can cause skin sensitisation and allergic contact dermatitis. Product may cause allergic contact dermatitis by skin contact	3	2	6	Avoid contact with the skin, eyes or clothing. Read and follow manufacturer's recommendations. Wear full protective clothing for prolonged exposure and high concentrations including Chemical-resistant, impervious gloves	2	2	4	Do not eat drink or smoke in the same room as this material. If prolonged contact occurs wash immediately with plenty of water. Remove any contaminated clothing and launder before reuse. If irritation persists or develops, seek medical attention.	1	2	2
3	Potential for causing fire or explosion	2	4	8	Keep away from oxidisers, heat & flames. Store with good ventilation. Keep containers tightly closed. Eliminate all sources of ignition and take precautions against static discharge. Note that vapours are heavier than air and can pool or travel long distances to ignition source. In fire may generate formaldehyde gas and carbon oxides.	1	4	4	In the event of a fire use Water spray/fog, foam, dry chemical or CO2. Do not use water jets. Cool containers with water spray.	1	4	4
4.	Harmful if inhaled	2	3	6	Ventilate well, avoid breathing vapours. Ventilation: Use local or general exhaust mechanical ventilation to control vapours Use approved respirator if air contamination is above accepted level.	1	3	3	If affected remove patient to fresh air, allow to rest and keep warm. If not breathing, give artificial respiration and seek medical attention.	1	3	3

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5.	Accidental Spillage	3	3	9	Small spill: Stop leak without risk. Move containers from spill area. Absorb with an inert dry material or formaldehyde neutralising granules and place in an appropriate waste disposal container. Avoid dispersal of spilt material and run off and contact with, drains and sewers. See Spillage procedure at appendix 1 of this assessment	2	3	6	Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk-through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazardous area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment	1	3	3

Risk Scoring System

(Probability x Severity) = Risk Rating and can be a number between 1 and 25
Risk Classification – 1-3: Low Risk, 4-6 Moderate Risk, 8-12: Medium Risk, 15-25: High Risk

SEVERITY		PROBABILITY	
1	Minor injury such as a chemical burn or allergic reaction requiring limited medical treatment	1	There is little or no risk of injury or ill health. Only under rare unforeseen conditions is there the likelihood of injury or ill health, this should be the aim of all workplace activities
2	Injury requiring medical treatment, but unlikely to result in absence from work	2	Remote possibility, if other factors were present, injury or ill health might occur, but the probability is low
3	More serious injury, possibly requiring hospital attendance and could result in absence from work	3	Possible, the incident may happen if additional factors precipitate it, but is unlikely without the other factors
4	Severe injuries including chemical burn, inhalation leading to breathing problems requiring attendance at hospital for treatment	4	The event is probable; the effects of humans or of other factors could cause the event (injury or ill health), but is unlikely without additional factors
5	Serious or fatal injury	5	If the task continues, then it is certain that an injury or ill health will occur

MSDS Information

Name of substance/task	Neutral Buffered Formalin
Substance used for	Fixative for Histology Laboratories
Supplier(s) or Producer(s) & Contact Nos	Genta Medical
Hazardous substances involved	Formaldehyde and Methanol aqueous blend with pH buffer
Substance is: (Liquid, Solid, Gas, Aerosol)	Liquid
Estimated usage	
Hazard Phrases	H332 – Harmful if inhaled H317 - May cause an allergic reaction H341 - Suspected of causing genetic defects H350 – May cause cancer
Is there a safer alternative?	No, the Trust has not found a suitable alternative to the use of Formalin for preserving specimens.
Workplace Exposure Limits	Formaldehyde 2.00ppm / 2.50mg/m3 15-minute STEL 2.00ppm / 2.50mg/m3 8hr TWA Methanol 250ppm / 333 mg/m3 15-minute STEL Sk 200ppm / 266mg/m3 8hr TWA Sk

	Hazard	Control	First Aid
Inhalation	May cause respiratory irritation. Causes damage to organs. Can cause blindness.	If operating conditions cause high vapour concentrations or the TLV is exceeded, use full face respirator conforming to EN141, Type A or self-contained breathing apparatus	Remove patient to fresh air, allow to rest and keep warm. If not breathing, give artificial respiration and seek medical attention.
Eyes	Can cause irritation. Can cause severe eye irritation with permanent damage.	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid	Provide eyewash stations or shower, protective clothing. Flush immediately with plenty of water for at least 15 minutes, keeping eyelids open and avoiding contamination of unaffected eye. Seek medical

		splashes, mists, gases or dusts. Recommended: Tightly fitting goggles.	attention.
Skin	Product may cause allergic contact dermatitis by skin contact (type IV immune reaction, acute and chronic skin sensitisation). Persons sensitised to formaldehyde should not handle this product.	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products Rubber gloves - nitrile	Wash immediately with plenty of water. Remove any contaminated clothing and launder before reuse. If irritation persists or develops, seek medical attention
Ingestion	Toxic if swallowed.	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period	Rinse the mouth. Seek medical advice if you feel unwell
Others (please specify)			**Ensure that those giving first aid treatment do not get contaminated by product spills,**

Storage

Storage precautions: Keep away from oxidisers, heat & flames. Store with good ventilation. Keep containers tightly closed. Eliminate all sources of ignition and take precautions against static discharge.
Ventilation: Use local or general exhaust mechanical ventilation to control vapours. Note that vapours are heavier than air and can pool.

Accidental Release Measures

No action shall be taken involving any personal risk or without suitable training.
Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk-through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazardous area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. See Spillage procedure below

Action plan

Area	Action Required	By Whom	Target Date	Completion Date

Appendix 1 Spillage Procedure

Clinical Relevance / Purpose of Procedure
To ensure a prompt and safe mechanism, in dealing with the spillage of any specimen.

References
SFHPAT-ED-GEN128 Trust Health and Safety Policy
SFHPAT-HS-GEN001 Pathology Health and Safety Policy and Manual

Specification of staff
All trained and competent staff

Hazards and Safety precautions
Always use personal protective equipment (gloves, face mask, lab coat, goggles)
Use correct disinfectant as necessary at appropriate strength.
Use Spill kit as appropriate.
Follow Trust Moving & handling procedures.
Do not pick up broken glass by hand. Always use a brush & pan.

Equipment & Special Supplies

Personal Protective Equipment, Cleaning equipment designated for clearing laboratory spillages, spill kit as necessary, and specimen container as necessary.
Reagents, Standards or Calibrants and internal control materials
Disinfectant as necessary and Formaldehyde as necessary

Specimen Spillage Procedure

Occasionally histology or cytology specimens are accidentally spilled during transport, or on the bench or floor. This may be a large or small amount, but both must be treated as a biological hazard and dealt with accordingly. They must be dealt with promptly and efficiently. Despite the spillage, every effort must be made to salvage the specimen/s, as they may not be repeatable.

Note: Do not use general cleaning equipment or other type of spillage kit e.g., Body Fluid Spill Kit only use the equipment designated for Formalin spills. Suitable protective clothing must be worn at all times**.**

How to deal with Small Spills

Small spills (e.g., 1-10ml) can be easily dealt with using **2% Bioguard**.

1. If there is a recognizable specimen, salvage using forceps and place in a clean, appropriate container (formalin pot/universal) and label with patient information etc.
2. When a small spillage occurs, encircle the spillage with cotton wool and flood an adequate amount of 2% Bioguard on to the spillage.
3. Leave for 10 minutes.
4. Using absorbent material, e.g., cotton wool or paper hand towels, mop up the spillage**. Protective gloves must be worn**. Be extra careful if there is broken glass and dispose of in sharps bin. **Do not pick up glass with hands** but use pan and brush.
5. Dispose of the absorbent material in a clinical waste bag.
6. If the specimen is irretrievable, the clinician must be consulted, a senior member of staff informed, and an incident form filled in.

Large Spills

If a large amount of formalin (up to 1 litre) is spilt then a spillage kit is needed. **Ensure the correct spillage kit is used (formaldehyde or biological).**

If the volume of fluid is greater than 1litre evacuate the area and call the fire brigade**.**

1. Evacuate the area and inform a senior member of staff.
2. Take personal protective measures (lab coat, gloves & goggles) Use the Formaldehyde spillage kit to contain the spill and

ventilate area well.

3. Pour granules around the spill to encircle and contain the perimeter. Continue to evenly apply the granules to the rest of the spill (care to avoid splashing).
4. If there is a recognizable specimen, and it is safe to do so, salvage using forceps and place in a clean, appropriate container (formalin pot/universal) and label with patient information etc.
5. Seal off the area until the granules absorb the spill (15 to 20 minutes) and the area is safe.
6. Using protective clothing (lab coat, face mask, gloves & goggles) scoop up the spillage granules using brush and pan, found in the cleaner's room on the main histology corridor, and dispose of in doubled clinical waste bags. Clean the contaminated surface with hot water and detergent and dry the floor area affected.

Note: Do not use general cleaning equipment but the equipment designated for spills.

7. Disinfect the cleaning equipment with 2% Bioguard.
8. Notify the laboratory/area manager to record and investigate the incident.

Breakage of specimen container, during centrifugation

1. All specimens must be centrifuged in sealed buckets.
2. Inform senior staff of the breakage.
3. In the event of a known breakage before the bucket is opened then allow the unopened bucket to stand for 30 minutes before opening to allow infective aerosols to settle.
4. Remove the bucket from the centrifuge and open inside a class one safety cabinet.
5. Salvage the specimen if possible but beware of broken glass. If this is not possible then another specimen must be requested, and an incident form filled in.
6. Immerse the infected bucket 2% Bioguard and leave for 30 minutes. Repeat with the remaining buckets in the centrifuge as they may be contaminated as well. Rinse the buckets and wipe dry using paper towels.
7. Disinfect the interior of the centrifuge using centrifuge spray. Leave for 10 minutes.
8. Replace the sterilised buckets. The centrifuge is now ready for use.

Request form

1) If the request form is contaminated by a leaking specimen, then ensure a copy form is prepared and the original is disposed of

into a yellow incinerator bag.
2) If the contaminant is formaldehyde, place the request form to dry under extraction.
3) Disposable gloves must be worn when handling contaminated forms.

Chemical Spillage Procedure

THERE IS A LOW RISK OF A MAJOR SPILLAGE INCIDENT IN A HOSPITAL MEDICAL LABORATORY.
IF A SPILLAGE OCCURS THE APPROPRIATE CONTROL MEASURES WILL BE CONTAINED IN THE COSHH INFORMATION FOR THE SOP AND THE ROOM DATA. ALWAYS READ THIS INFORMATION BEFORE COMMENCING CLEAR UP.

1. Always use the personal protective equipment advised in the COSHH data sheets. Do not begin clearing the spillage until you have gloves, face visor and an external cover to protect your clothing. Notify a senior member of staff.
2. Use the chemical spillage granules provided to neutralise the chemical or reagent (located in the chemical store – Acid Neutralizer, Caustic Neutralizer and Solvent Adsorbent). Encircle the spillage and then cover the area with granules. Leave for 15-20 minutes.
3. Sweep the debris using a brush and dustpan, place into a yellow bag for disposal. Make sure that the bag is sealed. Place into another yellow bag to avoid any seepage. Do not use general cleaning equipment but the equipment designated for spills, located in the cleaner's room on the main histology dept. corridor.
4. Wash the bench or surface thoroughly with a few changes of water. A spray is ideal
5. Dry the surface thoroughly when finished.

Major spillage incident

1. Inform your supervisor, lab manager or safety representative immediately
2. Remove yourself and anyone else from the vicinity of the incident.
3. Restrict access to area with a barrier and warning signs if possible
4. If safe to do so, identify the spilled liquid. If you do not know, find out by reading the labels on identical containers if possible. Do not place yourself in any danger. You may need to refer to secondary information such as the main laboratory COSHH data file or even the supplier's delivery notes.
5. Check that there are no casualties. If there, are they should be dealt with appropriately by qualified personnel

6. Execute the emergency procedure used to tackle the spill. Always wear appropriate personal protective equipment
7. If the fire service is required, telephone the emergency number 2222 to alert switchboard. They will call the service immediately. If a telephone is unavailable break the nearest fire alarm
8. Immediately contain the spill with absorbent cotton wool by encircling the liquid and preventing further spreading. Use the absorbent spillage kit to neutralise the chemical as far as possible.
9. Place the saturated sorbents into disposal bags taking care not to overfill before sealing. Ensure that the disposal bags are correctly labelled and dispose of sorbents in accordance with the procedure on the COSHH data. If in doubt consult the local waste disposal authority for specialist information. Do not use general cleaning equipment but the equipment designated for spills, located in the cleaner's room on the main histology dept. corridor.

Biological Spillage Procedure

Note: do not use the Biological Spillage kit on urines

1. Take personal protective measures (lab coat, gloves & goggles) clear the area and seek assistance from BMS, or senior staff.
2. Use the Biological spillage kit – Haz-tab granules, to contain the spill
   - Pour granules around the spill to encircle and contain the perimeter.
   - Continue to evenly apply the granules to the rest of the spill (care to avoid splashing)
3. Keep the area clear until the spill is absorbed by the granules and the area is safe (approximately 20 minutes).
4. Using protective clothing (lab coat, gloves & goggles) scoop up the spillage granules and dispose of in doubled clinical waste bags. Clean with the current disinfectant in use and dry the area affected. Note Do not use general cleaning equipment but the equipment designated for spills, located in the cleaner's room on the main histology dept. corridor.
5. Rinse and decontaminate utensils used and the area. (Using water and then the current disinfectant)
6. Notify the laboratory manager to record and investigate the incident.

*** For urine spills, ensure personal protective clothing is worn:**

1. soak up the spillage with paper towel / cotton wool (dispose of in clinical waste bag & seal)
2. Clean with detergent & dry
3. Clean with the current disinfectant & dry

Important

For all the above incidents, the Laboratory Manager should be informed and an internal or Trust Incident investigation be completed