



Home Office

Home Office Certification for Police Chemical Irritant Sprays: PAVA Process and Guidance Document

Version 1, October 2024



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Version History

Version No	Purpose / Change	Date
1.0	Initial release of process and guidance document	Oct 2024

1. Introduction

1. This process and guidance document should be read in conjunction with The Home Office Standard for Police Chemical Irritants Sprays: PAVA, Publication Number: 23/14 (hereon in referred to as the Standard) which details the requirements that must be met for a PAVA Spray to achieve certification.
2. This process and guidance document provides supporting information for gaining certification of PAVA Sprays including suggested templates that will allow for a more efficient assessment against the requirements set out in the Standard.
3. For each application, there is a four stage process for achieving certification, outlined from paragraph 15. As part of this process the Home Office Nominated Test Laboratory (NTL) will conduct assessment of end-to-end certification activities for each application submitted for certification of Police chemical irritant spray product based on PAVA in line with the Standard. This consists of:
 - a) Conducting a technical file review assessment;
 - b) Conducting testing and providing the results to Home Office.
4. Subject to successful testing results from the NTL, Home Office will issue a certificate for the PAVA Spray.
5. The Police chemical irritant spray product based on PAVA is also referred to as 'device' or 'PAVA spray' throughout this document.
6. As described in the Standard the number of specific testing requirements depends on if the PAVA spray is:
 - (a) A new device undergoing certification for the first time;
 - (b) An existing certified device, with no changes/ modifications undergoing the 5 yearly Manufacturer Quality Testing (MQT);
 - (c) A change/modification to an existing certified device.

It is important to note that entry into the certification process does not guarantee that a device will be certified. Sufficient technical information is required to be provided together with successful testing performed in accordance with the Standard.

2. Freedom of Information Act and Confidentiality

7. Documents supporting a PAVA spray device application are provided to the UK Government and NTL in confidence. The documents will be protectively marked as 'OFFICIAL SENSITIVE – COMMERCIAL'. Applicants must allow NTL access to application and technical files, solely for the purpose of the NTL involvement in conducting independent assessment of PAVA Sprays, if required NTL will put in place an agreement between the applicant in handling data.
8. Applicants wishing to protect their documents from public release must indicate that they are providing information that they consider to be commercially sensitive or provided in confidence, and which documents this applies to. This can be achieved by annotating directly into documents and correspondence and including a suitable indicator within file names or email subjects (e.g. 'OS-C').
9. Applicants must be aware that all data required for certification, including the technical file and results of testing, will be retained by Home Office and could be shared within government, police forces and Home Office Technical Partner.
10. Home Office is subject to the Freedom of Information Act 2000. Information requests made under this Act are assessed on a case-by-case basis, and Home Office may not be able to withhold release of all documents. In this event, the applicant may be consulted on the content to redact before release.

3. The Home Office certification process for PAVA spray

Summary of Certification Process

11. The certification process for each application consists of four stages which is applicable for all types of applications (new device, MQT or modification to device):
 - a. **Stage 1** – Application including provision of technical files outlining details of the device;
 - b. **Stage 2** – Review of technical files and confirmation of tests to be conducted;
 - c. **Stage 3** – Testing of device and issue of results to Home Office;
 - d. **Stage 4** – Home Office decision on certification.
12. A flow diagram for the certification process for each application is provided in **Appendix A**, with detailed explanation provided from paragraph 15 onwards.
13. The Home Office reserves the right to decline the application from the applicant at any stage should it be deemed appropriate to do so. Home Office will have the final decision at stage 4 on issuing a certificate.
14. Each request for certification should have its own application which will be allocated a unique reference number. This should be cited in all correspondence relating to the certification application, in the subject header of emails.

Stage 1 – Application and technical files from the applicant on the details of the device.

15. Home Office will provide a window for notification to invite applications for a PAVA Spray. This will be done at regular interval throughout the year as determined by the Home Office and submissions timeline will outline when applications can be made. Any submissions outside of a period of admissions acceptance will be declined, and must be resubmitted during the next submission window.
16. When a window is open, applicants declare their intent to enter the certification process, either for a new device, modification(s) made to an already certified device or for the 5 yearly MQT. The application should describe the device entering the certification process and requirement for the device to be certified. This is done through providing Technical File, Part A General application information requirements (as outlined within **Appendix A of the Standard**). A suggested

Technical File submission table for Part A General application information requirements is provided in **Appendix B**.

17. Once complete the information required for technical File, part A General application information should be submitted directly to the Home Office by email: PEDwebsite@homeoffice.gov.uk
18. There are a limited number of approved solvent formulation for PAVA sprays for use by UK Police. These solutions are described in section 5.11 of the Standard. If an applicant has an alternative solution based on PAVA with a different solvent formulation, they must indicate it within the Technical File, Part A General application information. Home Office will inform the applicant whether approval for the alternative solution will be sought, then discuss the process for approval. The application will not proceed until this takes place.
19. Once the window is closed, Home Office will allocate each application an unique reference number, conduct a triage of all applications received and inform the applicant of decision for their proposed application for the PAVA Spray device to proceed to stage 2.
20. If the application is declined, the applicant will have 5 working days to appeal the decision. The Home Office will consider any appeals and aim to respond within 10 working days. The Home Office decision will be final.
21. The Home Office will inform NTL which applications are progressing into stage 2, providing the Technical File, Part A General application information from the applicant.
22. The applicant progressing to stage 2 must provide Technical File, Part B Technical File Detail Requirements (as outlined within **Appendix A of the Standard**) directly to the NTL. A suggested Technical File submission table for Part B Technical File Detail Requirements is provided in **Appendix B**. It would be beneficial that references are made to the location of information within an applicant's technical documentation, relevant to the requirements together with highlighting differences (if any) to the device since last certified. A signed applicant's declaration to confirm all information is correct must be made. The application and supporting documentation are required to be in English.

Devices undergoing Home Office Certification will be finalised production models. Prototypes or pre-production devices will not be considered for the certification process of PAVA sprays.

Certification is only valid for the version of device which has undergone testing; any changes to the device must be resubmitted through a new application.

Stage 2 – Review of technical files and confirmation of tests to be conducted.

23. For each application, the NTL will review the technical file details provided (Part A and Part B). If any information is unclear or missing, the NTL will seek clarification from the applicant. If significant revision is required, the technical file may be rejected without requests for clarification. The time to complete the technical file review will vary depending on the type of application and ease of access of information.
24. The NTL will confirm the applicant's declaration that the product has or has not changed since its last certification, particularly if a 5 yearly MQT certification is being proposed. This will not be required for certification applications for new devices.
25. The NTL will confirm if all technical file information has been met. In addition the NTL will confirm the tests and number of devices required (for stage 3 - testing) based on the Standard, the certification required (a new device, modified device or MQT) and the whether the device is to be certified in both the upright and inverted positions. Once complete, the NTL will produce a signed declaration confirming that a review has been carried out together with confirmation on the tests required and number of devices required for stage 3.
26. A suggested table in **Appendix C** could be used to capture the information on whether the technical file conditions have been met, confirmation of the test required, the number of devices required and the NTL signed declaration.
27. The NTL will notify the applicant directly and the Home Office via PEDwebsite@homeoffice.gov.uk that all technical file requirements have been met for the application, provide confirmation of the tests and number of devices required for stage 3 and their signed declaration. The unique reference number should be used in email correspondence.

Stage 3 – Testing of device and issue of results to Home Office

28. The applicant will provide the required number of devices at their cost (including, but not limited to shipping, duties and import taxes) to the NTL. The applicant will be required to obtain at their cost any appropriate export / import licences required in sending devices to the NTL. Applicants will liaise with the NTL to securely transport the required number of devices and PAVA solid sample (if required) in accordance with the NTL procedures. The NTL will provide confirmation of receipt of the devices to the applicant.
29. For each application, testing will take place at the NTL (or its predefined sub contractors as applicable). Testing will be completed in accordance with the

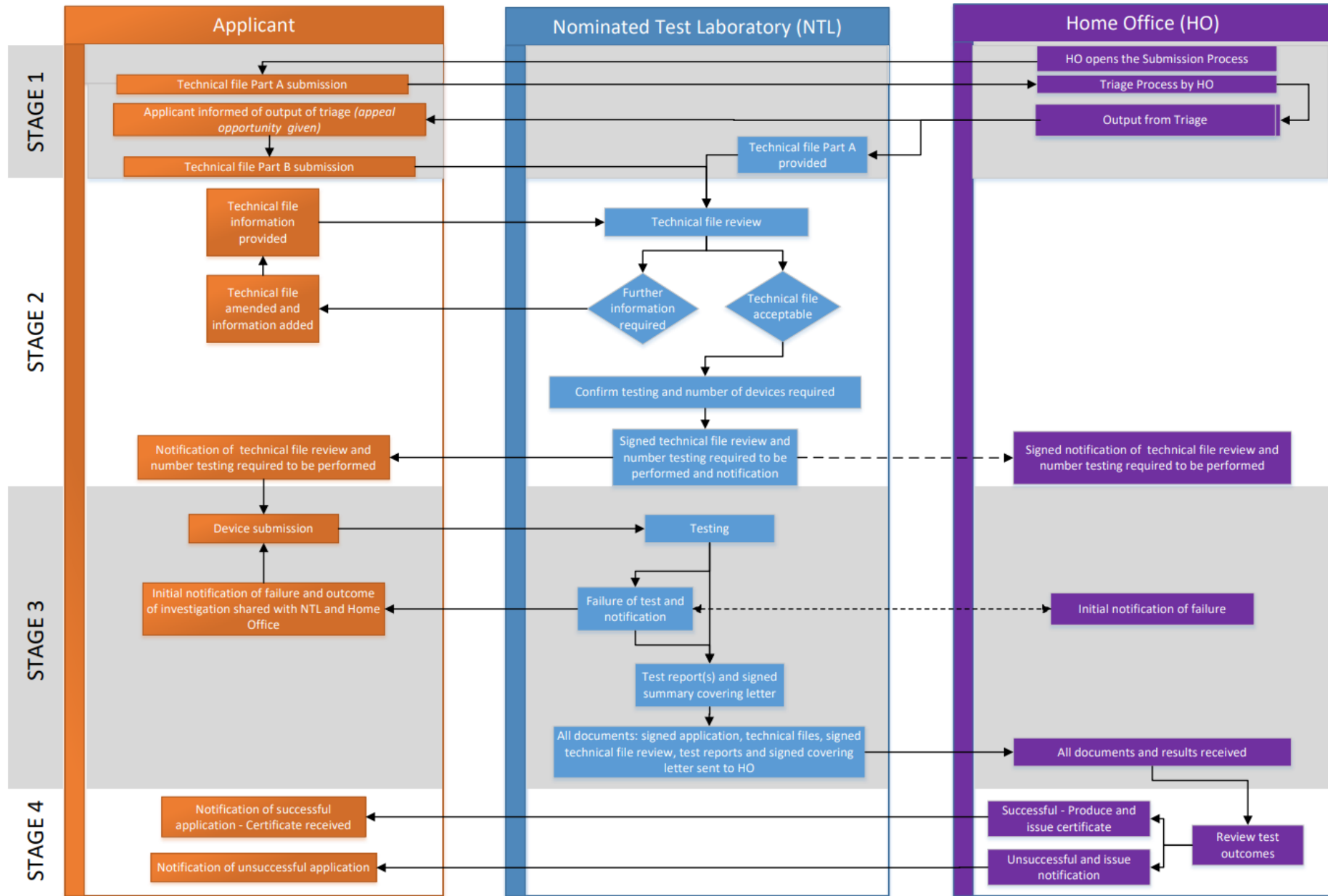
Standard. Suggested results tables in **Appendix D** could be used to capture the information and results required from testing.

30. Post testing, the NTL will produce a test report which provides the result outcomes. General test report guidance is provided in **Appendix E**.
31. The NTL will produce a signed summary covering letter from the laboratory manager alongside their test report(s). The covering letter will provide a summary of all the testing requirements that have been met together with the associated test report reference where detailed results can be found. Suggested guidance on the covering letter is provided in **Appendix F**.
32. For each application, following the completion of testing, the NTL will compile and send to Home Office, via PEDwebsite@homeoffice.gov.uk:
 - a. all of the information relating to the:
 - i. Technical file from the applicant, signed and completed Part A: General Application Information and Part B: Technical File Detail Requirements including final technical file documentation (e.g. signed and completed **Appendix B or equivalent**);
 - ii. NTL review of the technical files, the tests required and number of devices required (e.g. signed and completed **Appendix C** or equivalent)
 - b. the outcome of testing, including:
 - i. full test reports (including information of results for each assessment, examples of which are provided in **Appendix D**)
 - ii. an overall summary test report and covering letter, signed by the laboratory manager (e.g. signed and completed **Appendix F** or equivalent).
33. If a device fails to meet the requirement, testing will be discontinued and the NTL will immediately report the result to the Home Office and the applicant.
34. The applicant will be given one opportunity to investigate and rectify the issue and resubmit their device for testing, ensuring the technical file is updated to reflect the resolution of the issue. Prior to the resubmission of the device, the applicant is required to demonstrate why the issue occurred and to provide NTL and Home Office with an update on the remedial action taken to rectify the problem.
35. On completion of testing the NTL will disposal (in accordance with local regulations) of the devices.

Stage 4 – Home Office Decision on Certification

36. The Home Office will review the testing outcome from the NTL and inform the applicant of the decision on certification. If successful, Home Office will issue a certificate.

Appendix A - Home Office Certification Process Flow Diagram



Appendix B – Suggested Technical File Submission Table

Applicants may complete the green boxes in the table provided. Blue text provided within the green boxes provides guidance notes to aid applicants. Blue text may be removed once completed. As per the standard, for modifications of currently certified devices details of any changes compared to the original certified device shall be clearly highlighted and explained (it is acceptable to complete only the requirements relevant to the change marking 'no change' where needed).

Part A: General Application Information Requirements

General Application information		To be completed by applicant
A.1	Name of UK supplier & manufacturer	<i>Enter the name of the UK supplier and the manufacturer of the device.</i>
A.2	Full name of product	<i>Enter the exact name and model designation of the product.</i>
A.3	Type of product	<i>Describe in brief (1 or 2 sentences) the type of product.</i>
A.4	Purpose of submission: New device, modification to an existing certified device or no modification to device and approaching 5 years since device last certified.	<i>State whether this is a new device, a modification to an existing certified device or no modification to device and approaching 5 years since device last certified.</i>
A.5	Summary of function of device	<i>Describe in brief how the device operates.</i>
A.6	Summary of changes made to device since last certified. (Not required to be completed for new device)	<i>Not applicable for new devices. Describe the nature of the changes since it was last certified. If no changes or modification state clearly none.</i>
A.7	Brief outline the chemical formulation of solution, confirming if this is already approved solution as indicated in Home Office standard for Police chemical Irritant Sprays: PAVA.	<i>State the individual chemicals and their quantities for the device solution. Confirm if this is already an approved solution as indicated in Table 5 of section 5.11 of Home Office standard for Police chemical Irritant Sprays: PAVA</i>
A.8	Describe the Policing requirement, including any current and potential contractual obligation for this device or modification, and if there is policing sponsor.	<i>Does the device have a sponsoring body if so please indicate who this is? Are there any contractual obligations and or commitments from prospective police customers? This may include any existing contracts or frameworks that are in place for the procurement of device.</i>
Applicants' declaration		
<p>I confirm that:</p> <ul style="list-style-type: none"> The information is correct to the best of my knowledge. I am aware that all data required for certification, including the technical file and results of testing, will be retained by Home Office and could be shared within government, police forces and Home Office Technical Partner. Nominated Test Laboratory (NTL) will have access to application and technical files, solely for the purpose of the NTL involvement in conducting independent assessment of PAVA Sprays. <p>I am authorised to make this submission on behalf of the supplier</p>		
Name and position on behalf of applicant		<i>Enter the name of the representative of the applicant organisation and their role / job title.</i>
Date		<i>Enter the date of the signature.</i>

Part B: Technical File Detail Requirements

Technical File Details Requirements		Document name and page or brief commentary. <i>All technical file document referred to should be provided as attachments.</i>	Please state differences if modified since product was last certified. Not required to fill in if a new application undergoing certification for first time
B.1	Evidence of UK supplier's authority to possess, purchase, acquire, manufacture, sell or transfer prohibited weapons under Section 5 Firearms Act 1968.	<i>Copy of in date UK supplier's Section 5 authority</i>	
B.2	Evidence of full breakdown of solvent formulation detailing the composition of the PAVA solution contained in the device Confirmation if this is already approved solution as indicated in Home Office standard for Police chemical Irritant Sprays: PAVA.	<i>Full breakdown of solvent formulation.</i>	
B.3	Evidence and results from the flammability testing of aerosols in accordance with Aerosol Dispensers Regulations: 2009 No 2824 or equivalent.	<i>Test report from the test laboratory conducting regulatory flammability testing. To include results of ignition distance test and overall classification of product for flammability testing.</i>	
B.4	<p>Evidence that the following information is included on the label:</p> <p>Standard devices.</p> <ul style="list-style-type: none"> Nature of intended use, e.g. "PAVA spray, for Police Use Only". Supplier's name, address and telephone number Name of main ingredients e.g. "contains PAVA in ethanol and water". A number or code uniquely identifying each individual device. Date of manufacture Date at which shelf life expires. <p>Compliance with any part of the standard shall not be indicated on the device.</p> <p>Concealable devices.</p> <ul style="list-style-type: none"> A number or code uniquely identifying each individual device. Date at which shelf life expires <p>Compliance with any part of the standard shall not be indicated on the device and shall not specify that they are for police use.</p>	<i>Photograph of device label or image of label design.</i>	
B.5	Evidence of the propellant used and that it is non-flammable and non-toxic.	<i>Chemical Supplier's safety data sheet for propellant.</i>	

Technical File Details Requirements		Document name and page or brief commentary. <i>All technical file document referred to should be provided as attachments.</i>	Please state differences if modified since product was last certified. Not required to fill in if a new application undergoing certification for first time
B.6	Evidence that the purity of the PAVA in the solid phase is greater than or equal to 96.8% by weight.	<i>Chemical Supplier's safety data sheet and certificate of analysis for PAVA.</i>	
B.7	Evidence of the analytical methods used to analyse the chemical contents of PAVA devices for internal batch testing purposes.	<i>Statement from manufacturer detailing the analytical method used to analyse the chemical contents of PAVA for internal batch testing e.g. High Performance Liquid Chromatography with UV detector at 254nm.</i> <i>Detail of the validation for the method.</i>	
B.8	Evidence of the results of internal batch testing to include points below 8.1 – 8.3	<i>See 8.1 – 8.3</i>	
B.8.1	Evidence that for a PAVA device no measured concentration is above 0.335 %wt/vol or below 0.265 %wt/vol. after filling and pressurising.	<ul style="list-style-type: none"> <i>Chromatographs from chemical analysis including references. To include peak area and associated measurements.</i> 	
B.8.2	Evidence that the mean of the measured concentrations is 0.3±0.03 %wt/vol after filling and pressurising.	<ul style="list-style-type: none"> <i>Chromatographs from chemical analysis including references. To include peak area and associated measurements.</i> 	
B.8.3	Evidence that substances other than the solvents and PAVA is less than 1% wt/vol of the solvents and PAVA combined after filling and pressurising.	<ul style="list-style-type: none"> <i>Chromatographs from chemical analysis including references. To include peak area and associated measurements.</i> 	
B.9	The density of the solution at 20°C.	<ul style="list-style-type: none"> <i>Statement from manufacturer on density of the solution at 20°C.</i> 	
B.10	Shelf-life of the device and evidence that the product is stable over the maximum period of the shelf-life.	<ul style="list-style-type: none"> <i>Statement from manufacturer on shelf-life of the device.</i> <i>Results from chemical analysis and physical testing to support the shelf-life statement.</i> 	
B.11	Evidence of the construction of the device including device assembly method.	<ul style="list-style-type: none"> <i>Manufacturer's drawings detailing all components.</i> <i>Statement from manufacturer detailing device assembly method.</i> 	
B.12	Details of the supplier for each component and chemical for the device.	<i>List of all components and chemicals used in the device to include:</i> <ul style="list-style-type: none"> <i>Part number or CAS number</i> <i>Size (if applicable)</i> <i>Supplier name and address</i> 	

Technical File Details Requirements		Document name and page or brief commentary. <i>All technical file document referred to should be provided as attachments.</i>	Please state differences if modified since product was last certified. Not required to fill in if a new application undergoing certification for first time
B.13	Hazard information for the PAVA Device. Hazard information must include any information relating to Control of Substances Hazardous to Health (COSHH) regulations or any safety precautions required in handling the device.	<ul style="list-style-type: none"> <i>List of the individual chemicals in PAVA solution and quantity.</i> <i>Safety data sheets for each individual chemical and overall safety data sheet for device.</i> 	
B.14	Detail and evidence of working to recognised quality control systems in the design and manufacture of device	<ul style="list-style-type: none"> <i>Manufacturer to provide detail of Quality Management System with an in date accreditation certificate if applicable.</i> 	
B.15	Detail and evidence of suitable sampling and inspection for device. This is to include plans for internal batch testing for traceability from individual components, chemicals and testing to identify any defect.	<ul style="list-style-type: none"> <i>Detail of the sampling and inspection plan for internal batch testing purposes to include the traceability from individual components and chemicals to final product.</i> <i>Detail of the sampling and inspection plan to ensure representative samples from each batch of production devices tested to identify any defect which prevents the device from being drawn, made ready to discharge and discharged in the intended manner. Examples of such defects are:</i> <ul style="list-style-type: none"> <i>on attempting to remove the device from the holster/pouch, the over cap comes off;</i> <i>any anti-tamper device cannot be disengaged;</i> <i>the discharge valve fails to open fully;</i> <i>the nozzle assembly is not properly attached to the discharge valve;</i> <i>the device is incorrectly pressurised, resulting in a low, or high, discharge rate</i> 	
B.16	Confirm if device to be used in upright or both the upright and inverted positions.	<ul style="list-style-type: none"> <i>Statement from manufacturer on orientation of use for the device i.e. Upright or both upright and inverted.</i> 	
B.17	Declaration statement and evidence that the PAVA device/product is produced in accordance with all relevant legislation and to a recognised quality control standard.	<ul style="list-style-type: none"> <i>Details of relevant legislation and quality control standard followed to be provided.</i> <i>Declaration (signed below).</i> 	

Technical File Details Requirements		Document name and page or brief commentary. <i>All technical file document referred to should be provided as attachments.</i>	Please state differences if modified since product was last certified. Not required to fill in if a new application undergoing certification for first time
B.18	Evidence that the device will operate reliably and consistently throughout its warranted lifetime.	<ul style="list-style-type: none"> Declaration (signed below). Documentation of tests used to verify warranty lifetime. 	
Applicants' declaration			
<p>I confirm that:</p> <ul style="list-style-type: none"> The PAVA product is produced in accordance with all relevant legislation. The design of the PAVA Spray has been finalised and devices available for the tests. The device will operate reliably and consistently throughout its warranted lifetime. The information is correct to the best of my knowledge. I am aware that all data required for certification, including the technical file and results of testing, will be retained by Home Office and could be shared within government, police forces and Home Office Technical Partner. Nominated Test Laboratory (NTL) will have access to application and technical files, solely for the purpose of the NTL involvement in conducting independent assessment of PAVA Sprays. I am authorised to make this submission on behalf of the supplier 			
Name and position on behalf of applicant		Enter the name of the representative of the applicant organisation and their role / job title.	
Date		Enter the date of the signature.	

Appendix C: Suggested Table for Nominated Test Laboratory completion regarding Technical File and Test Requirements.

Unique Reference number			
General Application Questions		Confirmation of acceptable level of details provided (Yes / No)	Comments (if any)
A.1	Name of UK supplier & manufacturer		
A.2	Full name of product		
A.3	Type of product		
A.4	Purpose of submission: New device, modification to an existing certified device or no modification to device and approaching 5 years since device last certified.		
A.5	Summary of function of device		
A.6	Summary of changes made to device since last certified. <i>(Not required to be completed for new device)</i>		
A.7	Brief outline the chemical formulation of solution, confirming if this is already approved solution as indicated in Home Office standard for Police chemical Irritant Sprays: PAVA.		
A.8	Describe the Policing requirement, including any current and potential contractual obligation for this device or modification, and if there is policing sponsor.		
Technical File Details		Requirement Met / not met / N/A	Comments (if any)
B.1	Evidence of UK supplier's authority to possess, purchase, acquire, manufacture, sell or transfer prohibited weapons under Section 5 Firearms Act 1968.		
B.2	Evidence of full breakdown of solvent formulation detailing the composition of the PAVA solution contained in the device Confirmation if this is already approved solution as indicated in Home Office standard for Police chemical Irritant Sprays: PAVA.		
B.3	Evidence and results from the flammability testing of aerosols in accordance with Aerosol Dispensers Regulations: 2009 No 2824 or equivalent.		
B.4	Evidence that the following information is included on the label: Standard devices.		

	<ul style="list-style-type: none"> Nature of intended use, e.g. "PAVA spray, for Police Use Only". Supplier's name, address and telephone number Name of main ingredients e.g. "contains PAVA in ethanol and water". A number or code uniquely identifying each individual device. Date of manufacture Date at which shelf life expires. <p>Compliance with any part of the standard shall not be indicated on the device.</p> <p>Concealable devices.</p> <ul style="list-style-type: none"> A number or code uniquely identifying each individual device. Date at which shelf life expires <p>Compliance with any part of the standard shall not be indicated on the device and shall not specify that they are for police use.</p>		
B.5	Evidence of the propellant used and that it is non-flammable and non-toxic.		
B.6	Evidence that the purity of the PAVA in the solid phase is greater than or equal to 96.8% by weight.		
B.7	Evidence of the analytical methods used to analyse the chemical contents of PAVA devices for internal batch testing purposes.		
B.8	Evidence of the results of internal batch testing to include points below 8.1 – 8.3		
B.8.1	Evidence that for a PAVA device no measured concentration is above 0.335 %wt/vol or below 0.265 %wt/vol. after filling and pressurising.		
B.8.2	Evidence that the mean of the measured concentrations is 0.3 ± 0.03 %wt/vol after filling and pressurising.		
B.8.3	Evidence that substances other than the solvents and PAVA is less than 1% wt/vol of the solvents and PAVA combined after filling and pressurising.		
B.9	The density of the solution at 20°C.		
B.10	Shelf-life of the device and evidence that the product is stable over the maximum period of the shelf-life.		
B.11	Evidence of the construction of the device including device assembly method.		
B.12	Details of the supplier for each component and chemical for the device.		
B.13	Hazard information for the PAVA Device. Hazard information must include any information relating to Control of Substances Hazardous to Health (COSHH) regulations or any safety precautions required in handling the device.		
B.14	Detail and evidence of working to recognised quality control systems in the design and manufacture of device		

B.15	Detail and evidence of suitable sampling and inspection for device. This is to include plans for internal batch testing for traceability from individual components, chemicals and testing to identify any defect.		
B.16	Confirm if device to be used in upright or both the upright and inverted positions.		
B.17	Declaration statement and evidence that the PAVA device/product is produced in accordance with all relevant legislation and to a recognised quality control standard.		
B.18	Evidence that the device will operate reliably and consistently throughout its warranted lifetime.		
Testing to be carried out & number of devices required			
Section	Test	Yes/ No	Justification
5.2	Inspection of Labelling.		
5.3	Resistance to Crushing.		
5.5	Drop Testing.		
5.6	Determination of Discharge Rate.		
5.7	Determination of Impact Pressure of Spray to Solid Surface.		
5.8	Performance at Extreme Temperature.		
5.9	Assessment of Flammability.		
5.10	Compatibility of Spray with Conducted Energy Devices.		
5.11	Chemical analysis.		
5.12	Inert devices.		
			Total live devices required (including spares)
			Total inert devices required (including spares)
Nominated Test Laboratory declaration			
<p>I confirm that:</p> <ul style="list-style-type: none"> • The Technical file requirements have all been met. • The number of test requirements to be carried out is correct. • The information is correct to the best of my knowledge. • The information may be used in reports by Home Office, for distribution within government, and may be shared with Home Office Technical Partner. • I am authorised to make this assessment on behalf of the Nominated Test Laboratory 			
Name and position on behalf of Nominated Test Laboratory		Enter the name of the representative of the applicant organisation and their role / job title.	
Date		Enter the date of the signature.	

Appendix D: Suggested Results Tables

D.1. Inspection of Labelling

Date of test: Manufacturer:

Type of device: Device capacity:

For standard devices (min of 30ml):

Device Number	
Information Required	Yes / No
Nature and intended use, e.g. "PAVA Spray, For Police Use Only"	
Supplier's / Manufacturer's name, address and telephone number	
Name of main ingredients, e.g. "Contains PAVA in ethanol, water and monopropylene glycol."	
A number or code uniquely identifying each individual device.	
Date of manufacture	
Date at which shelf life expires	
Label and base information remains legible after contact with PAVA solution for 2 minutes	

For concealable devices (10 ml – 30 ml):

Device Number	
Information Required	Yes / No
A number or code uniquely identifying each individual device.	
Date at which shelf life expires	
Label and base information remains legible after contact with PAVA solution for 2 minutes.	

D.2 Resistance to Crushing

Date and time of test:

Manufacturer:

Type of device:

Device capacity:

Conditioning temperature.....

Laboratory temperature.....

Test number	1	2	3
Device number			
Spray Pattern Test	PASS / FAIL	PASS / FAIL	PASS / FAIL
Spray 1			
Spray 2			
Spray 3			
Spray 4			
Spray 5			
Spray 6			
Spray 7			
Spray 8			
Spray 9			
Spray 10			
Spray 11			
Spray 12			
Generic testing requirements	PASS / FAIL	PASS / FAIL	PASS / FAIL
shall be discharged when the actuator is activated (e.g. button depressed);			
shall stop discharging when the actuator is de-activated (e.g. button released);			
shall not be discharged as a result of any action other than intended discharge;			
shall not be damaged so that the device cannot physically be discharged without remedial action (e.g. actuator falls off or significant damage to the cap);			
shall not leak.			

D.3 Drop Testing

Note: Refer to the Standard for the number of test to be carried out.

Date and time of test: Manufacturer:
 Type of device: Device capacity:
 Conditioning temperature..... Laboratory temperature.....

Test number	1	2	3	4	5	6	7	8	9
Position no & orientation	Position 1 Upright	Position 2 Upright	Position 3 Upright	Position 4 Upright	Position 5 Upright	Position 6 Upright	Position 7 Upright	Position 8 Upright	Position 9 Upright
Device number									
Spray Pattern Test	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL
Spray 1									
Spray 2									
Spray 3									
Spray 4									
Spray 5									
Spray 6									
Spray 7									
Spray 8									
Spray 9									
Spray 10									
Spray 11									
Spray 12									
Generic testing requirements	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL
shall be discharged when the actuator is activated (e.g. button depressed);									
shall stop discharging when the actuator is de-activated (e.g. button released);									
shall not be discharged as a result of any action other than intended discharge;									
shall not be damaged so that the device cannot physically be discharged without remedial action (e.g. actuator falls off or significant damage to the cap);									
shall not leak.									

Drop Testing continued

Test number	10	11	12	13	14	15	16	17
Position no & orientation	Position 10 Upright	Position 11 Upright	Position 12 Upright	Position 13 Upright	Position 14 Upright	Position 1 Inverted	Position 3 Inverted	Position 5 Inverted
Device number								
Spray Pattern Test	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL
Spray 1								
Spray 2								
Spray 3								
Spray 4								
Spray 5								
Spray 6								
Spray 7								
Spray 8								
Spray 9								
Spray 10								
Spray 11								
Spray 12								
Generic testing requirements	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL
shall be discharged when the actuator is activated (e.g. button depressed);								
shall stop discharging when the actuator is de-activated (e.g. button released);								
shall not be discharged as a result of any action other than intended discharge;								
shall not be damaged so that the device cannot physically be discharged without remedial action (e.g. actuator falls off or significant damage to the cap);								
shall not leak.								

D.4 Determination of Discharge Rate

Note: A different results sheet is required for each device to be tested.

Date and time of test: Manufacturer:
 Type of device: Device capacity:
 Conditioning temperature..... Laboratory temperature.....
 Orientation: Device number.....

	Spray Duration	Weight 1	Weight 2	Weight 3	Average weight
Start	---				
Spray 1					
Spray 2					
Spray 3					
Spray 4					
Spray 5					
Spray 6					
Spray 7					
Spray 8					
Spray 9					
Spray 10					
Spray 11					
Spray 12					

Determination of Discharge Rate Continued

Note: Additional columns may be added depending on the number of devices to be tested in accordance with standard.

Device Number			
Spray number	Device 1 Discharge rate (ml/s)	Device 2 Discharge rate (ml/s)	Device 3 Discharge rate (ml/s)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
D			
$\bar{D}$			
P			
Amin			
Amax			
Generic testing requirements	Device 1 PASS / FAIL	Device 2 PASS / FAIL	Device 3 PASS / FAIL
shall be discharged when the actuator is activated (e.g. button depressed);			
shall stop discharging when the actuator is de-activated (e.g. button released);			
shall not be discharged as a result of any action other than intended discharge;			
shall not be damaged so that the device cannot physically be discharged without remedial action (e.g. actuator falls off or significant damage to the cap);			
shall not leak			

D.5 Determination of Impact Pressure of Spray to Solid Surface

Note: Additional columns may be added depending on the number of devices to be tested in accordance with standard.

Date and time of test:

Manufacturer:

Type of device:

Device capacity:

Conditioning temperature.....

Laboratory temperature.....

Orientation:

Device Number			
Spray No	Maximum Pressure (kPa)	Maximum Pressure (kPa)	Maximum Pressure (kPa)
Spray 1			
Spray 2			
Spray 3			
Spray 4			
Spray 5			
Spray 6			
Spray 7			
Spray 8			
Spray 9			
Spray 10			
Spray 11			
Spray 12			
Spray XX (add additional rows as required)			
Determination of Impact Pressure of Spray to Solid Surfaces of requirements	PASS / FAIL	PASS / FAIL	PASS / FAIL
Device will also be deemed to have failed if the measured pressure, for any one second burst, exceeds the maximum pressure of 40 kPa			
Generic testing requirements	PASS / FAIL	PASS / FAIL	PASS / FAIL
shall be discharged when the actuator is activated (e.g. button depressed);			
shall stop discharging when the actuator is de-activated (e.g. button released);			
shall not be discharged as a result of any action other than intended discharge;			
shall not be damaged so that the device cannot physically be discharged without remedial action (e.g. actuator falls off or significant damage to the cap);			
shall not leak.			

D.6 Performance at Extreme Temperatures

Assessment of Spray Pattern

Date and time of test:

Manufacturer:

Type of device:

Device capacity:

Laboratory temperature.....

Orientation:

Test number	1	2	3	4	5	6
Initial Conditioning temperature						
Device number						
Spray Pattern Test	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL
Spray 1						
Spray 2						
Spray 3						
Spray 4						
Spray 5						
Spray 6						
Spray 7						
Spray 8						
Spray 9						
Spray 10						
Spray 11						
Spray 12						
Generic testing requirements	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL	PASS / FAIL
shall be discharged when the actuator is activated (e.g. button depressed);						
shall stop discharging when the actuator is de-activated (e.g. button released);						
shall not be discharged as a result of any action other than intended discharge;						
shall not be damaged so that the device cannot physically be discharged without remedial action (e.g. actuator falls off or significant damage to the cap);						
shall not leak.						

Determination of Discharge Rate

For Performance at Extreme Temperatures when conducting Determination of Discharge Rate, suggested results table in D.4 Determination of Discharge Rate may be used.

Determination of Impact Pressure of Spray to Solid Surface

For Performance at Extreme Temperatures when conducting Determination of Impact Pressure of Spray to Solid Surface, suggested results table in D.5 Determination of Impact Pressure of Spray to Solid Surface may be used.

D.7 Assessment of Spray Flammability

Note: A additional columns may be added for depending on the number of devices to be tested in accordance with standard.

Date and time of test: Manufacturer:
 Type of device: Device capacity:
 Conditioning temperature..... Laboratory temperature.....
 Orientation:

Device Number			
Spray Flammability	PASS / FAIL	PASS / FAIL	PASS / FAIL
No Flame Extension Towards device			
Flame not Self-Sustaining			
Generic testing requirements	PASS / FAIL	PASS / FAIL	PASS / FAIL
shall be discharged when the actuator is activated (e.g. button depressed);			
shall stop discharging when the actuator is de-activated (e.g. button released);			
shall not be discharged as a result of any action other than intended discharge;			
shall not be damaged so that the device cannot physically be discharged without remedial action (e.g. actuator falls off or significant damage to the cap);			
shall not leak.			

D.8 Assessment of Compatibility of Spray with Conducted Energy Devices

Date and time of test:

Manufacturer:

Type of device:

Device capacity:

Conditioning temperature.....

Laboratory temperature.....

Device number					
		2 half-second bursts		Entire Device	
Spray duration		Pulsing spark of five seconds	Pulsing spark of five seconds	Pulsing spark of five seconds	Pulsing spark of five seconds
Part 1a	Visible Flames (Y/N)				
	Visible Smouldering (Y/N)				
Part 1b	Visible Flames (Y/N)				
	Visible Smouldering (Y/N)				
Additional comments					
Generic testing requirements		PASS / FAIL		PASS / FAIL	
shall be discharged when the actuator is activated (e.g. button depressed);					
shall stop discharging when the actuator is de-activated (e.g. button released);					
shall not be discharged as a result of any action other than intended discharge;					
shall not be damaged so that the device cannot physically be discharged without remedial action (e.g. actuator falls off or significant damage to the cap);					
shall not leak.					

D.9 Chemical Analysis of PAVA Solutions

Note: Additional columns may be added for sample analysis replicates according to best practice and NTL methods. The table below details the requirements.

Name and address of testing laboratory and location.....

Date of receipt of samples.....

Date and time of test:

Chemical Analysis of PAVA Samples		
Test method		
Specification of test	Purity of irritant agent in solid phase The purity of the PAVA must be determined in the solid phase and must be at least 96.8% by weight.	
Reference number	Sample Results % w/w	Pass/Fail
Solid		
Specification of test	Concentration of the liquid contents of the device after filling and pressurising - For a PAVA device no measured concentration shall be above 0.335% wt/vol. or below 0.265% wt/vol. The mean of the measured concentrations shall be $0.3 \pm 0.03\%$ wt/vol.	
Reference number	Sample Results % wt/vol.	Pass/Fail
Solution 1		
Solution 2		
Solution 3		
Solution 4		
Solution 5		
Mean for the measured concentrations		
Specification of test	Overall purity of the liquid contents of the device after filling and pressurising For a PAVA device substances other than the solvents and PAVA must form less than 1% wt/vol. of the solvents and PAVA combined.	
E.g. Note: The maximum impurity measured (other than for PAVA and solvents) was [insert] wt/vol. of the material. All other impurities [were/were not] less than 1% wt/vol. of the material. This [meets/does not meet] the requirement in 5.11 of the 2024 Home Office Standard (23/14).		

D.10 Inert Devices

Determination of Impact Pressure of Spray to Solid Surface

For Inert devices when conducting Determination of Impact Pressure of Spray to Solid Surface, suggested results table in D.5 Determination of Impact Pressure of Spray to Solid Surface may be used.

Appendix E: Test Report Guidance

1. The report title should include the name of the device under consideration including the unique reference number of the application.
2. Test reports should list all serial numbers of the individual Devices.
3. All test results and data should be reported whether or not the candidate device is considered to have passed or failed the test, in accordance with the information detailed in the Standard.
4. The NTL should ensure that test methods used for each component of the overall test programme are reported in full.
5. Any deviation from agreed test requirements should be fully documented in the test report, along with justification for the deviation. This should include additional testing that is carried out. Any deviations shall be considered at the Home Office's discretion.
6. Any unexpected outcome from normal and correct operation of the PAVA spray should be reported.
7. The NTL should document in the report and test report covering letter:
 - a. potential vulnerabilities identified by the NTL;
 - b. any vulnerabilities that the NTL believes are not adequately explored in the testing.
8. The documentation should outline the conditions under which any vulnerability or potential vulnerability might become an operational issue. The NTL following discussion with Home Office and the applicant may investigate any identified vulnerability or potential vulnerability further. Home Office reserve the right to request additional testing.
9. Test setup should be in accordance with the documented procedure provided. All equipment setup parameters, including installation geometry (for example, heights of apparatus above the ground and relative positions), should be presented clearly.
10. Test reports should provide complete details of test parameters used alongside any observations made at each step.
11. Test reports should be presented clearly, and should be accurate and concise.
12. Test reports should include a standalone summary section, distinct from the covering letter, identifying the device, the tests conducted, and indicating pass/fail results. A list of the main observations, notes, and remarks should be noted in the report. Conclusions, summaries and observations should be clearly identifiable, for example, by positioning them near the top of the test report.

Appendix F: Test Report Example Covering Letter

Test Report Example Covering letter

Confirmation of testing completion

THIS IS NOT A CERTIFICATE OF COMPLIANCE

The device detailed below **has / has not** met the requirements set out in the Home Office Standard for Police Chemical Irritant Sprays: Pelargonic Acid Vanillylamide (PAVA) Publication Number: 23/14, v2, October 2024 (Hereinafter referred to as 'the standard').

Nominated Test Laboratory (NTL)	
Unique reference number	
Supplier's name	
Product model number	
Certification type a. New certification b. Change/modification to certified device. c. Manufacturer Quality Testing (MQT)	
Any main observations, notes and remarks the NTL wish to highlight	
Overall statement from NTL: I confirm that the testing has been completed in accordance with the requirements detailed within the Standard. I confirm that the summary detailing the pass or fail criteria of each test against Home Office requirements is shown below together with the location of the files that results can be found. I confirm that all results have been obtained, reviewed and the device has passed / failed the requirements detailed within the Standard to meet thresholds for issuing a certification.	
NTL Manager Signature	
NTL Manager name	
Issue date	

Section in standard	Heading title	Standard / Concealed device	Comments	Result document file title and page number
5.1	Capacity			
Section in standard	Test	Result: PASS / FAIL / N/A	Comments	Result document file title and page number
5.2	Inspection of Labelling.			
5.3	Resistance to Crushing.			
5.5	Drop Testing.			
5.6	Determination of Discharge Rate.			
5.7	Determination of Impact Pressure of Spray to Solid Surface.			
5.8	Performance at Extreme Temperature.			
5.9	Assessment of Flammability.			
5.10	Compatibility of Spray with Conducted Energy Devices. ¹			
5.11	Chemical analysis.			
5.12	Inert devices.			
¹ There are no pass/fail criteria for this assessment; the results will be provided for information. However, the device shall satisfy the general requirements as outlined in the standard.				

