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Chain of custody in the Brazilian criminal procedure system

Cadeia de custódia no sistema processual penal brasileiro

Cadena de custodia en el sistema procesal penal brasileño

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Abstract:
This study examines the function of the chain of custody in the Brazilian criminal procedure system and the legal consequences of its violation. It adopts a qualitative, bibliographic and documentary approach, examining legislation, specialist scholarship, technical material on digital forensics and Superior Court of Justice precedents published through September 2026. It describes the ten stages set out in Article 158-B of the Code of Criminal Procedure and examines the particular features of digital evidence, including source preservation, forensic imaging, operational documentation and hash verification. The findings indicate that a break in the chain of custody does not automatically result in nullity. Its consequences depend on the seriousness of the failure, the possibility of authentication by other means, the importance of the trace evidence, the existence of independent evidence and the impairment of adversarial scrutiny. Depending on the case, an irregularity may affect evidentiary weight, lead to inadmissibility, undermine the validity of an expert report or reveal insufficiency in the remaining body of evidence. The study concludes that the chain of custody is a mechanism for procedural and epistemic control of criminal evidence whose application requires proportionality and conceptual precision.

Keywords: Chain of custody. Criminal procedure. Digital evidence. Adversarial scrutiny. Evidentiary reliability.

Resumo:
Este trabalho analisa a função da cadeia de custódia no sistema processual penal brasileiro e as consequências jurídicas de sua violação. A pesquisa adota abordagem qualitativa, bibliográfica e documental, com exame da legislação, de doutrina especializada, de material técnico de informática forense e de precedentes do Superior Tribunal de Justiça publicados até setembro de 2026. São descritas as dez etapas do art. 158-B do Código de Processo Penal e examinadas as particularidades da prova digital, incluindo preservação da fonte, espelhamento, documentação das operações e verificação por hash. Os resultados indicam que a quebra da cadeia de custódia não produz nulidade automática. Suas consequências dependem da gravidade da falha, da possibilidade de autenticação por outros meios, da centralidade do vestígio, da existência de prova independente e do prejuízo ao contraditório. Conforme o caso, a irregularidade pode afetar a valoração, conduzir à inadmissibilidade, comprometer a validade do laudo ou revelar insuficiência do conjunto probatório remanescente. Conclui-se que a cadeia de custódia constitui mecanismo de controle processual e epistêmico da prova penal, cuja aplicação exige proporcionalidade e precisão conceitual.

Palavras-chave: Cadeia de custódia. Processo penal. Prova digital. Contraditório. Confiabilidade da prova.

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Resumen:
Este trabajo analiza la función de la cadena de custodia en el sistema procesal penal brasileño y las consecuencias jurídicas de su vulneración. La investigación adopta un enfoque cualitativo, bibliográfico y documental y examina la legislación, la doctrina especializada, el material técnico de informática forense y precedentes del Superior Tribunal de Justicia publicados hasta septiembre de 2026. Se describen las diez etapas del artículo 158-B del Código de Proceso Penal y se examinan las particularidades de la prueba digital, incluidas la preservación de la fuente, la creación de imágenes forenses, la documentación de las operaciones y la verificación mediante hash. Los resultados indican que la ruptura de la cadena de custodia no genera nulidad automática. Sus consecuencias dependen de la gravedad del fallo, de la posibilidad de autenticación por otros medios, de la centralidad del vestigio, de la existencia de prueba independiente y del perjuicio al principio de contradicción. Según el caso, la irregularidad puede afectar la valoración, conducir a la inadmisibilidad, comprometer la validez del informe pericial o revelar insuficiencia del conjunto probatorio restante. Se concluye que la cadena de custodia constituye un mecanismo de control procesal y epistémico de la prueba penal, cuya aplicación exige proporcionalidad y precisión conceptual.

Palabras clave: Cadena de custodia. Proceso penal. Prueba digital. Principio de contradicción. Fiabilidad de la prueba.

Introduction

The chain of custody occupies an important position in criminal proceedings because it documents the origin, preservation, handling and interventions performed on trace evidence until its use in the proceedings. With Law No. 13,964/2019, the Code of Criminal Procedure expressly regulated this mechanism in Articles 158-A to 158-F, establishing procedures to ensure the traceability of evidentiary material from recognition to disposal (BRASIL, 1941; BRASIL, 2019). Its purpose is not to create an autonomous formality, but to provide objective grounds for assessing whether the examined source retains sufficient identity and integrity to support expert conclusions and judicial decisions.

The topic is particularly important because the Code does not prescribe a single consequence for every irregularity. Some failures are merely documentary and can be clarified without compromising the use of the evidence, while more serious breaks prevent verification of the origin of trace evidence, hinder adversarial scrutiny or make independent expert re-examination impossible. In the digital environment, the problem intensifies: files can be copied, modified or presented out of context without perceptible changes. This requires attention to source preservation, documentation of operations, forensic imaging and integrity verification mechanisms (BADARÓ, 2021).

The research therefore addresses the following question: what are the legal effects of using evidence whose chain of custody has not been properly preserved in Brazilian criminal

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proceedings? The hypothesis is that a break in the chain of custody does not automatically result in nullity. Its consequences depend on the nature and seriousness of the failure, the possibility of verifying the material by other means, the impairment of adversarial scrutiny and the existence of independent evidence. An irregularity may thus affect evidentiary weight, admissibility or the validity of a procedural act, or, after setting aside the compromised item, the sufficiency of the body of evidence itself.

This study aims to analyze the function of the chain of custody in the Brazilian criminal procedure system, describe the stages laid down in Article 158-B of the Code of Criminal Procedure, examine the particular features of digital evidence and systematize the legal consequences associated with the main forms of breach. It adopts a qualitative, bibliographic and documentary approach, analyzing legislation, specialist scholarship, technical material on digital forensics and Superior Court of Justice precedents published through September 2026, selected for their direct relevance to integrity, traceability, defense access, loss of storage media and the procedural effects of chain-of-custody breaches.

Following this introduction, the study presents the foundations of the chain of custody, examines its statutory stages, devotes a specific chapter to the chain of custody of digital evidence and, finally, distinguishes the possible consequences of noncompliance, emphasizing evidentiary weight, inadmissibility, nullity, derivative evidence and evidentiary insufficiency. The conclusion revisits the research problem and assesses the hypothesis against the findings drawn from the legislation, scholarship and case law analyzed.

1 Chain of custody in Brazilian criminal proceedings

1.1 Concept and purpose

Article 158-A of the Code of Criminal Procedure defines the chain of custody as the set of procedures used to maintain and document the chronological history of trace evidence, tracking its possession and handling from recognition to disposal. Paragraph 3 of that article defines trace evidence as any object or raw material, visible or latent, identified or collected in connection with a criminal offense (BRASIL, 1941). This definition shows that the mechanism extends beyond storage, comprising a sequence of identification, preservation, transfer, examination and documentation activities.

Two complementary dimensions are involved. The first is material: trace evidence must be protected against alteration, loss, contamination or mixing. The second is documentary:

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legitimate interventions must be recorded so that its trajectory can be reconstructed. Preservation without documentation may leave doubts about possession; perfect documentation, in turn, cannot compensate for actual deterioration of the source. The strength of the system depends on the coordination of both dimensions.

A central purpose is to ensure the identity of trace evidence throughout the proceedings. Scholarship and case law use the term “sameness” to express the need to demonstrate that the object analyzed corresponds to the one originally located or collected (BRASIL, 2022). This does not mean that the material must remain untouched. Laboratory tests may consume samples, containers may be opened and files may be duplicated. The requirement is that necessary interventions be identified, justified and documented.

In HC 653.515/RJ, the Sixth Panel of the Superior Court of Justice emphasized that chain-of-custody irregularities must be assessed alongside the other evidence produced in order to establish reliability (BRASIL, 2022). The decision is relevant because it rejects an automatic response. An irregularity matters, but its consequences depend on the function that the breached rule served in preserving the identity and reliability of the trace evidence.

The chain of custody is also related to adversarial proceedings and the full exercise of defense rights. Scrutiny of expert evidence extends beyond reading the final result. Properly challenging a report may require knowledge of the sample's origin, the condition of the material, collection circumstances, procedures used and changes occurring during examination. Traceability strengthens procedural oversight of the premises underlying expert activity (BRASIL, 1988; BRASIL, 1941).

1.2 Commencement, continuity and responsibility

Under Article 158-A, paragraph 1, of the Code of Criminal Procedure, the chain of custody begins when the crime scene is preserved or trace evidence is identified during police or forensic procedures. Its commencement therefore precedes the arrival of the material at the laboratory. An evidentiary source may be compromised before collection if the environment is altered, objects are handled without records or their original position is not documented (BRASIL, 1941).

Paragraph 2 of that article assigns preservation responsibility to the public official who recognizes an item as potentially relevant to the production of expert evidence. This shows that custody is not exclusively the expert's responsibility. Police officers, custody-center personnel,

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transport personnel and examining professionals form a sequence of responsibilities that must remain identifiable.

Continuity depends on sufficient records of transfers of possession and relevant interventions. At each stage, it should be possible to reconstruct who received the material, from whom, on what date, under what conditions and for what purpose. A missing piece of information does not itself establish tampering; it nevertheless creates uncertainty whose importance depends on the centrality of the trace evidence, other available records and the possibility of independent verification.

The chain of custody is therefore best understood as both a technical and a procedural mechanism. It guides material preservation, imposes documentation duties and provides judges and parties with criteria for assessing whether the source presented remains capable of critical examination.

2 Stages of the chain of custody under the Code of Criminal Procedure

Article 158-B of the Code of Criminal Procedure lists ten stages: recognition, isolation, documentation, collection, packaging, transport, receipt, processing, storage and disposal. This list must be read alongside Articles 158-C to 158-F, which address collection, containers, seals and custody centers (BRASIL, 1941). Although presented separately, these stages form a continuous cycle.

2.1 Recognition

Recognition is the identification of an item as potentially relevant to the production of expert evidence. This moment is decisive because it triggers subsequent protection and recording duties. Late identification may allow disappearance, alteration or improper contact before preservation measures are adopted.

Recognition should extend beyond items confirming the initial investigative hypothesis. Trace evidence potentially favorable to the defense must also be preserved. The chain of custody protects the evidentiary source as such, including material that may not support the prosecution's account.

2.2 Isolation

Isolation seeks to prevent changes to the state of things and control access to the environment associated with the event. It involves delimiting the area, restricting movement

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and protecting trace evidence against contact, displacement and environmental conditions that could compromise later examination.

Article 158-C, paragraph 2, prohibits entry into an isolated scene and the removal of trace evidence before release by the responsible expert, providing for criminal consequences for conduct contrary to the rule. Emergencies may require interventions to protect life or safety, but these changes must be recorded so that the subsequent examination can take them into account (BRASIL, 1941).

2.3 Documentation

Documentation consists of a detailed description of the trace evidence and its position at the crime scene or in the material evidence of the offense. Photographs, video recordings, sketches and other resources may complement the record. Its purpose is to retain contextual information that may disappear when material is collected or the scene is released.

The position of a cartridge case, the distribution of stains, distances between objects or the location of electronic equipment may acquire meaning only in relation to the whole. Documentation therefore preserves both the object and the context necessary for subsequent interpretation.

2.4 Collection

Collection is the retrieval of trace evidence for analysis in accordance with its characteristics. Article 158-C provides that collection should preferably be carried out by an official expert, who will arrange appropriate delivery to the custody center, including where additional examinations are needed (BRASIL, 1941).

The method must suit the nature of the material. Biological samples require cross-contamination prevention; liquids require appropriate containers; weapons require safety procedures and preservation of marks; electronic devices may require measures to prevent synchronization, remote access or commands that modify data. In all cases, individualization and identification of the responsible person are essential.

2.5 Packaging

Packaging consists of individually enclosing trace evidence according to its properties. Information needed to identify the material, the responsible person and the time of collection

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must be recorded. The container should reduce the risks of contamination, mixing, leakage or deterioration.

Article 158-D requires containers closed with individually numbered seals. Any opening must be documented, identifying the responsible person, purpose, date, place and new seal, while retaining the broken seal. The aim is to make legitimate interventions visible and allow unexplained access to be identified (BRASIL, 1941).

2.6 Transport

Transport involves moving trace evidence between locations under appropriate conditions of security and preservation. It encompasses physical movement and control of possession, timing, responsible personnel and incidents. Depending on the material, refrigeration or protection against light, moisture, impact or other degrading factors may be necessary.

Unidentified deliveries, delays incompatible with the nature of the trace evidence or unsuitable transport conditions may raise doubts about the condition of the material at examination. Recording these circumstances allows an assessment of whether the irregularity had a real effect or was merely formal.

2.7 Receipt

Receipt formalizes the transfer of possession and provides an opportunity to check the material, seals and documentation. Article 158-B, item VII, requires information on origin, the person responsible for transport, tracking code, examination type, trace evidence type, protocol and the identity of the receiving person (BRASIL, 1941).

Discrepancies observed at this stage must be recorded. Damaged packaging, inconsistent numbering or missing information should not simply be corrected without a record, since documenting the problem itself enables its subsequent significance to be assessed.

2.8 Processing

Processing comprises the expert examination and the operations necessary to obtain the technical result. These may include tests, measurements, extractions, comparisons, opening containers or partially consuming samples. Relevant interventions must be compatible with the chosen method and sufficiently documented to permit understanding and possible review.

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This stage shows that integrity does not mean immobility. The object may undergo changes inherent in examination, provided they are controlled and explicable. The problem arises when a necessary transformation cannot be distinguished from an unknown change occurring during custody.

2.9 Storage

Storage is the safekeeping of material before or after processing under conditions that permit preservation, access control and possible re-examination. Article 158-E requires criminalistics institutes to maintain a custody center for controlling trace evidence, with appropriate environmental conditions and access protocols (BRASIL, 1941).

Preservation after the expert report is especially relevant for non-repeatable trace evidence. If the defense can exercise adversarial scrutiny only after the expert findings are presented, loss of the source during that interval may make independent expert re-examination impossible and turn an administrative failure into a concrete procedural problem.

2.10 Disposal

Disposal physically ends custody and must comply with the authorization and rules applicable to the nature of the trace evidence. Premature destruction may eliminate the possibility of re-examination. Disposal should therefore not occur while legal or expert preservation needs remain.

Even after the material is physically eliminated, its documentary history remains relevant. It must be possible to establish when, on what grounds and by whom the trace evidence was disposed of. The end of physical custody does not eliminate the need to preserve the record of its trajectory.

2.11 An integrated reading of the stages

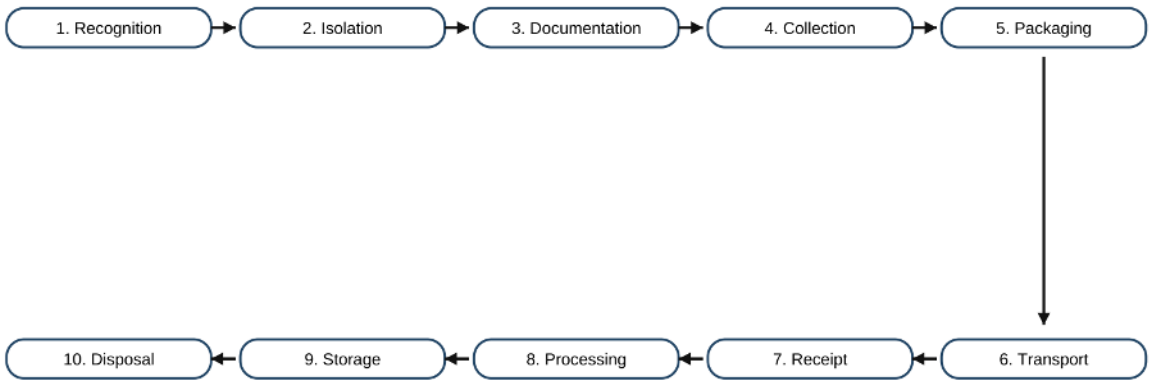
The stages do not operate as independent compartments. An initial failure may affect subsequent phases: inadequate recognition compromises isolation; incomplete documentation removes context from collection; unsuitable packaging affects transport; poor storage may prevent independent expert re-examination. Assessing the chain therefore requires a continuous reading of its trajectory.

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Figure 1 presents the sequence set out in Article 158-B. The diagram is illustrative and does not replace the specific rules of Articles 158-C to 158-F, but shows that each stage depends on documentation and preservation of the preceding link.

Figure 1 – Stages of the chain of custody under Article 158-B of the Code of Criminal Procedure



Source: prepared by the author based on Article 158-B of the Code of Criminal Procedure (BRASIL, 1941).

3 Chain of custody of digital evidence

The increasing presence of electronic data in criminal investigations requires adapting the same values that guide the custody of physical trace evidence. Identity, integrity, documentation and verifiability remain central, but the technical means differ. A file can be copied without apparent loss, modified within seconds or presented outside its original context. The reliability of digital evidence therefore depends on procedures capable of recording its origin and the operations performed.

3.1 Particular features of digital evidence

Digital evidence is immaterial and can be reproduced on multiple media. Simply viewing its content does not establish that it has remained intact since collection. Metadata may record dates, paths, identifiers and other information absent from a screenshot. Volatile data

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may also be modified through normal system operation, synchronization or the investigator's own access.

Badaró (2021) emphasizes the need for methodological standards appropriate to digital forensics. Preservation must permit source individualization, acquisition documentation and an auditable result. This does not mean that every screenshot lacks value, but shows that reliability must be assessed in light of the context and available authentication elements.

3.2 Identification, collection and preservation

When dealing with an electronic device, the first concern is to preserve the source and minimize unnecessary changes. Computers, phones, memory cards and external drives may contain local data, credentials, temporary information or connections to remote services. The specific strategy depends on the device's condition, the information sought and the circumstances of the investigative operation.

The Standard Operating Procedure for Digital Forensics published by the Ministry of Justice and Public Security in 2024 recommends methods that preserve original content, produce working copies and document the operations performed (BRASIL, 2024). Its purpose is to reduce unnecessary manipulation and maintain the possibility of repeating or auditing the examination, rather than prescribing a single tool.

The lawfulness of acquisition must be distinguished from proper custody. Access may depend on a court order, consent or another legal basis. Once the material is lawfully obtained, the issue becomes how it was preserved and analyzed. A technically sound chain does not remedy earlier unlawfulness; likewise, judicial authorization for access does not dispense with subsequent integrity precautions.

3.3 Forensic imaging, forensic copies and hash functions

A forensic image, or bit-for-bit copy, seeks to reproduce the content of storage media or a device in a controlled manner, enabling examination of a working copy and reducing repeated handling of the source. Forensic imaging allows future comparison between the preserved material and the material actually analyzed.

In AgRg in RHC 143.169/RJ, the Fifth Panel of the Superior Court of Justice emphasized documentation of data retrieval, storage and extraction. In that case, the absence of adequate records and mechanisms capable of demonstrating integrity led to the inadmissibility

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of digital evidence and derivative evidence (BRASIL, 2023). The precedent reinforces that reliability should not be presumed merely because the material remained in State custody.

A hash function generates a mathematical value associated with a dataset and allows comparison to verify whether two versions remain identical. Its usefulness derives precisely from this comparative chain. Recording a code without identifying the source, generation time and file subsequently compared does not, by itself, resolve the integrity issue.

Case Law Bulletin 838 of the Superior Court of Justice is instructive: the existence of hashes alone did not guarantee integrity where some files were corrupted and the necessary comparison between the forensic image and the material presented in the proceedings was not performed (BRASIL, 2025a). Complementarily, Inq 1.674/DF recognized that forensic imaging combined with hashing is an effective means of ensuring the integrity and auditability of immaterial evidence (BRASIL, 2026b).

These precedents do not support the assertion that the absence of a hash alone always invalidates evidence. In AgRg in HC 1.014.212/ES, the Sixth Panel considered technical examination necessary where reasonable doubt existed about the authenticity and integrity of insufficiently certified digital items (BRASIL, 2026a). The consequence therefore depends on the full set of elements available to confirm the material's reliability.

3.4 Documentation and auditability

Documentation of digital evidence must permit reconstruction of the principal operations performed since source identification. Relevant information includes the device, date and time, equipment condition, responsible person, acquisition method, tool used, copies generated, hash values where employed, storage locations and subsequent transfers.

Auditability means that third parties can understand the technical path leading to a result and, within procedural limits, verify its consistency. Missing documentation may prevent distinguishing a change inherent in forensic procedures from an unknown modification. Recording is therefore linked to substantive content: it enables oversight of result reliability.

The Superior Court of Justice's case law has rejected abstract confidence in State custody where the procedures needed to demonstrate integrity are not presented. At the same time, recent decisions indicate that documentary failures must be assessed concretely, particularly when other technical elements demonstrate preservation and absence of prejudice (BRASIL, 2023; BRASIL, 2026b).

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3.5 Adversarial scrutiny and independent expert re-examination

Adversarial scrutiny of digital evidence requires sufficient access to the material and necessary records for the defense to verify integrity, context and extraction methods. Providing only selected excerpts may prevent assessment of the whole and conceal data potentially relevant to the defense's interpretation.

In RHC 218.358/PI, the Sixth Panel held expert reports null where their underlying media became inaccessible in full to the defense because of storage failures. The decision linked the consequence to the concrete impossibility of counter-evidence and ineffective adversarial scrutiny, rather than to an abstract nonconformity alone (BRASIL, 2025b).

When the source still exists and doubts can be resolved technically, an additional measure may restore verifiability. AgRg in HC 1.014.212/ES exemplifies this intermediate solution: it ordered expert examination in response to reasonable doubts about integrity and authenticity (BRASIL, 2026a). Counter-evidence and additional expert examination are therefore distinct instruments: the former is an exercise of defense scrutiny; the latter may be a judicial measure for technical clarification.

3.6 Case law of the Superior Court of Justice

Recent developments in Superior Court of Justice case law show that the legal response varies with the type of failure. HC 653.515/RJ established the general principle that chain-of-custody irregularities must be weighed alongside the body of evidence to assess reliability (BRASIL, 2022). AgRg in RHC 143.169/RJ developed this reasoning for digital evidence, emphasizing minimum documentation and verification mechanisms (BRASIL, 2023).

In Case Law Bulletin 838, corruption of some files and inadequate hash comparison compromised the completeness of the evidence, resulting in inadmissibility (BRASIL, 2025a). In RHC 218.358/PI, lost media prevented full defense access and resulted in nullity of the affected reports (BRASIL, 2025b). In 2026, AgRg in HC 1.014.212/ES recognized the need for additional expert examination when reasonable doubt could still be clarified (BRASIL, 2026a).

Also in 2026, Inq 1.674/DF recognized that forensic imaging combined with hashing could demonstrate integrity and auditability, and allowed police officers to perform preliminary data verification and collection without immediate expert involvement, provided chain-of-custody requirements were preserved (BRASIL, 2026b). Read together, the precedents show

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there is no single formula. The central question is whether sufficient objective elements exist to reconstruct data origin, demonstrate integrity and ensure scrutiny by the parties.

Table 1 – Summary of the Superior Court of Justice precedents used in this study

Precedent	Situation examined	Court's response	Central idea
HC 653.515/RJ	Irregularities involving physical trace evidence	Concrete reliability assessment	A breach does not produce an automatic response
AgRg in RHC 143.169/RJ	Digital evidence without adequate documentation	Inadmissibility of the evidence and derivative evidence	The State must demonstrate integrity
Case Law Bulletin 838	Corrupted files and insufficient hash comparison	Inadmissibility	Completeness and auditability are essential
RHC 218.358/PI	Loss of media and impossibility of defense access	Nullity of the affected expert reports	Source loss prevented counter-evidence
AgRg in HC 1.014.212/ES	Reasonable doubt about insufficiently certified digital evidence	Additional expert examination	Remediable doubt requires technical clarification
Inq 1.674/DF	Forensic imaging, hashing and preliminary collection	Technique held valid in the case	Hashes and forensic imaging can ensure auditability

Source: prepared by the author from the Superior Court of Justice decisions cited in the text.

4 Consequences of chain-of-custody violations

4.1 Formal and material failures

The expression “break in the chain of custody” describes failures affecting a link in the tracking, preservation or control of trace evidence. Such failures may involve a lack of isolation, seals, identification, transport, storage, access documentation, file integrity or source preservation. Their seriousness, however, varies.

It is useful to distinguish a formal failure from a materially significant one. The former occurs where documentation or procedures are deficient, but objective elements still demonstrate the identity and integrity of the trace evidence. The latter arises when a gap prevents verification that the analyzed material corresponds to the collected source, whether it

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underwent a relevant alteration or whether the defense retains a real opportunity to scrutinize the procedure.

This distinction avoids two opposite errors. The first treats the chain as a ritual in which any discrepancy automatically renders evidence unusable. The second treats every irregularity as merely an administrative problem. Consequences must relate to the function that the breached rule performed in preserving reliability and adversarial scrutiny.

4.2 Evidentiary weight, inadmissibility, nullity and evidentiary insufficiency

The legal categories involved must be distinguished. Evidentiary weight concerns the significance the judge attributes to an item that remains in the case record. A small documentary gap, overcome through independent records and without compromising the identity of the material, may justify caution in assessment without preventing consideration of the evidence.

Inadmissibility concerns the impossibility of using an item as evidence when it lacks the minimum legal conditions for admission to or retention in the proceedings. In chain-of-custody matters, this consequence may arise where source reliability cannot be demonstrated in a minimally auditable manner, particularly with incomplete digital evidence or missing essential records. AgRg in RHC 143.169/RJ and the precedent reported in Case Law Bulletin 838 illustrate this response (BRASIL, 2023; BRASIL, 2025a).

Procedural nullity has a different object. Rather than being a generic synonym for unreliable evidence, nullity affects a procedural act or, in specific circumstances, an expert result when the failure compromises essential guarantees. In RHC 218.358/PI, the Superior Court of Justice held the reports null because the loss of media in State custody made full defense access and the production of counter-evidence impossible (BRASIL, 2025b). The rationale concerned concrete impairment of adversarial scrutiny.

Unlawful evidence, in turn, does not automatically coincide with a custody breach. Unlawfulness relates to obtaining or producing evidence in violation of substantive rules or fundamental guarantees. Evidence may be lawfully obtained and subsequently suffer preservation failures. Material may also be technically well preserved but have been obtained unlawfully. These are distinct levels of analysis.

Finally, evidentiary insufficiency is a conclusion about the remaining body of evidence. Even if an item is excluded, the final outcome depends on the existence of independent evidence. If, without the compromised trace evidence, the prosecution cannot overcome the doubt consistent with the presumption of innocence, a conviction cannot be sustained.

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Exclusion of evidence and acquittal are therefore distinct categories, although they may be related in a particular case.

4.3 Derivative evidence and Article 157 of the Code of Criminal Procedure

Article 157 of the Code of Criminal Procedure establishes the inadmissibility of unlawful evidence and, in paragraph 1, regulates derivative evidence, subject to exceptions involving absence of a causal link and an independent source (BRASIL, 1941). Applying this regime to chain-of-custody failures requires caution, since deficient traceability does not necessarily amount to unlawful acquisition.

Where an irregularity merely reduces the weight of evidence, there is no automatic reason to taint subsequent items. However, if the source is ruled inadmissible and later evidence causally depends on it, the issue of derivation may arise. In AgRg in RHC 143.169/RJ, the Superior Court of Justice held both the affected digital evidence and evidence derived from it inadmissible, a solution tied to the particular circumstances of the case (BRASIL, 2023).

The effect on derivative evidence must therefore be justified by the nature of the defect, the causal link and any independent source. Article 157 should not be turned into an automatic consequence of every documentary chain-of-custody failure.

4.4 Effects on the criminal judgment

The importance of a breach also depends on the position of the evidence within the evidentiary whole. If trace evidence merely corroborates facts established by independent sources, its reduced weight or exclusion may not change the outcome. If, instead, it is indispensable to establishing the occurrence of the offense or authorship, its compromise may remove the support necessary for conviction.

HC 653.515/RJ illustrates this relationship. The Superior Court of Justice did not establish an abstract rule of automatic nullity, but examined the reliability of the material and the other available elements (BRASIL, 2022). The appropriate consequence depends on what remains after the failure has been addressed. This perspective connects the chain of custody with the standard of proof while keeping the two concepts distinct.

Where doubts about integrity can still be resolved technically, an additional examination may be a proportionate solution. AgRg in HC 1.014.212/ES shows that case law permits clarifying measures instead of immediate exclusion, provided they effectively restore verifiability and preserve adversarial scrutiny (BRASIL, 2026a).

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4.5 Liability arising from chain-of-custody violations

In addition to evidentiary effects, certain conduct may give rise to administrative, civil or criminal liability. Article 158-C, paragraph 2, of the Code of Criminal Procedure provides that entering an isolated scene or removing trace evidence before release by the responsible expert, contrary to the statutory rules, may constitute procedural fraud (BRASIL, 1941).

However, not every chain-of-custody nonconformity constitutes professional misconduct or a crime. Liability depends on the conduct, the required mental element and the rules applicable to the official. A form-filling error, negligent loss of material, intentional manipulation and unauthorized access are legally distinct situations and must be assessed according to their own requirements.

5 Conclusion

The research demonstrated that the chain of custody serves an essential function in criminal evidence by allowing reconstruction of the origin, identity, integrity and trajectory of trace evidence. The provisions introduced by Law No. 13,964/2019 into Articles 158-A to 158-F of the Code of Criminal Procedure gave legal force to a sequence of preservation and documentation duties directly influencing expert reliability and the parties' ability to scrutinize the evidence.

The ten stages of Article 158-B must be understood as a continuous cycle. Recognition, isolation, documentation, collection, packaging, transport, receipt, processing, storage and disposal have both individual and interconnected significance. Reliability results from their connections and the ability to explain relevant interventions performed on trace evidence. The flowchart summarizes this continuity and shows that failures in one link may affect subsequent phases.

The study also concluded that chain-of-custody violations should not be treated as a single category. Some failures affect only evidentiary weight; others may lead to inadmissibility; in specific situations, impairment of adversarial scrutiny may undermine report validity; and, after compromised evidence is removed or weakened, the remaining body may be insufficient to support the charge. Unlawful evidence, inadmissibility, nullity and evidentiary insufficiency are related but distinct concepts.

In the digital field, the need for auditability is even clearer. Forensic imaging, forensic images, documentation of operations and hash comparison are relevant tools for demonstrating

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integrity. A hash, however, is not an autonomous seal of validity, and its absence alone does not justify a uniform consequence. It is necessary to assess whether other objective means can confirm the material's origin and reliability and whether, in the face of reasonable yet remediable doubt, an additional expert examination can restore verifiability.

The precedents examined confirm this graduated approach. HC 653.515/RJ requires a concrete reliability assessment; AgRg in RHC 143.169/RJ and Case Law Bulletin 838 reinforce the need for digital evidence integrity and documentation; RHC 218.358/PI recognizes a more severe consequence when source loss prevents counter-evidence; AgRg in HC 1.014.212/ES permits expert clarification where doubts can be resolved; and Inq 1.674/DF recognizes forensic imaging and hashing as mechanisms for integrity and auditability.

The hypothesis formulated in the introduction is therefore confirmed: the consequences of a breach vary according to the seriousness of the compromise and must be determined by the function of the breached rule, the possibility of authentication by other means, the centrality of the trace evidence, the existence of independent evidence and impairment of adversarial scrutiny. Proper examination goes beyond identifying an irregularity and investigates whether objective grounds remain for trusting the source presented in the proceedings.

The chain of custody thus operates as a mechanism for procedural and epistemic control of criminal evidence. Compliance reduces uncertainty about the source, strengthens scrutiny and contributes to decisions based on verifiable elements. Its application simultaneously requires proportionality and conceptual precision: not every failure invalidates evidence, but significant breaks cannot be ignored when they prevent demonstration that the material presented in court corresponds to the trace originally located, retrieved or collected.

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