

Information:
Air Travel with Passive Dosimeters

Status: 10.09.2026

X-rays during baggage screening at airports

During baggage screening at airports, the passive dosimeter's dose readings can be significantly increased. The following aspects should be noticed:

- Checked baggage (suitcases) will always be scanned! Therefore, transporting the dosimeter in checked baggage should be avoided in general!
- 3D scanners (CT) are now also being used for hand baggage screening. This new technology can result in dose levels in the millisievert range.
- This usually results in the intended personal dose no longer being accessible, as the airport dose component is unknown and often accounts for the larger portion of the measured value.

Handling personal dosimeters during baggage screening

A: Avoid airport exposure.

- **Try to avoid exposing the dosimeter during baggage screening.**
To do so, present your dosimeter at the hand baggage screening, along with the information on the back of this leaflet: "Official Dosimeters – Do Not X-Ray!"
- Ask that the dosimeter be tested using alternative methods (e.g., a wipe test) and not to expose it to any X-rays.
- Important: There is **no legal right** to bypass X-ray screening!

B: Estimate and proof transport exposure.

- If exposure cannot be avoided, exposure from baggage screening can be estimated using a **reference dosimeter**. For that, use a second dosimeter of the same design that was delivered together with the personal dosimeter.
- Have both dosimeters as close together as possible in your hand luggage (e.g., using a rubber band) and store the personal dosimeter together with the reference dosimeter after use.
- After the trip, return both dosimeters together to the dosimetry service and note "Reference dosimeter for (number of personal dosimeter)" on the allocation sheet ("Zuordnungsbogen"). Please enter "03" as the purpose ("Zweck"), which means "additional dosimeter," so that this result is not reported to the German National Dose Register.
- The indication of the reference dosimeter allows to demonstrate to official institutions that the reason for a non-zero indication of the personal dosimeter is due to the airport scanner exposure (and not due to an exposure at work).

IMPORTANT:

- The dose indication of the reference dosimeter **is not subtracted** from the personal dosimeters indication! A subtraction leads to a substantially increased measurement uncertainty of the determined personal dose value, rendering this value **unusable**!

Consultation at +49 231 4502-518

Questions: beratung.dosimetrie@mpanrw.de

Information sheet on Official Personal Dosimeters



Do not X-Ray!
Nicht Röntgen

X-Rays might induce false-positive dose indications.
Röntgenstrahlung führt zu falsch-positiven Dosisanzeigen.



Do not open protective bag!
Schutzfolie nicht aufschneiden

Removing the protective bag might render the dosimeter not evaluable.
Eine geöffnete Schutzfolie kann zur Unauswertbarkeit des Dosimeters führen.

Personal dosimeters according to Section 66, Sentence 1, Number 1 of the German Radiation Protection Ordinance (StrlSchV): The personal dosimeters listed below are approved for determining body dose in accordance with Section 65 of the Radiation Protection Ordinance (StrlSchV) and were issued by a dosimetry service designated in accordance with Section 169 of the Radiation Protection Act (StrlSchG) (MPA NRW):

MPA TL-DOS GD 01



Passive (= measuring system without energy consumption for subsequent evaluation in suitable measuring devices) personal dosimeter for X-rays and gamma radiation. Two detectors with LiF:Mg,Ti as a sensitive layer on aluminum substrates.

Approved by the
Physikalisch-Technische Bundesanstalt (PTB)
under approval number:

DE-22-M-PTB-0008

MPA-Albedo GD 02



Passive personal dosimeter for gamma and neutron radiation. 4 detectors with LiF:MgTi as the sensitive elements. The dosimeter must remain sealed in the foil to avoid compromising evaluation.

Approved by the
Physikalisch-Technische Bundesanstalt (PTB)
under approval number:

DE-17-M-PTB-0068

These dosimeters **must not be X-rayed** because they cannot be switched off due to their design. X-ray exposure must be avoided at all costs to avoid compromising their intended purpose under radiation protection law.

www.dosimetrie.de