

Personal radiation monitoring devices

Updated June 2024

EPA 609/24: This information sheet discusses the use of approved personal radiation monitoring devices for radiation workers within South Australia.

Introduction

A personal radiation monitoring device (PRMD) is a radiation sensor designed to measure, over a specified period of time, the radiation dose received by a person who is occupationally exposed to radiation.

Legislation covering their use

The use of PRMDs in South Australia is governed by legislation under the *Radiation Protection and Control Act 2021* (RPC Act) and the *Radiation Protection and Control Regulations 2022* (RPC Regulations). Both legislation are administered by the Radiation Protection Branch of the Environment Protection Authority (EPA).

Under Regulation 86 employers are required to issue an approved personal radiation monitoring device for each worker who will receive a radiation dose that exceeds:

- 1 under all foreseeable scenarios (including credible accident scenarios) – 1 mSv per year, or
- 2 under low probability scenarios¹ – a dose limit set out in Regulation 85.

Radiation source categories and PRMD requirements

For workers whose only radiation work is operation of one of the following categories of radiation sources, the EPA has determined that Regulation 86(2) dose limits are unlikely to be exceeded and the provision of PRMD to these employees is not mandatory. For workers who undertake activities involving radiation sources in addition to those listed in this document or more than one of the categories listed, it is the employer's responsibility to determine the total radiation doses, and to issue a personal radiation monitoring device to those workers who exceeds the limits:

- dental apparatus used for dental radiography

¹ A low probability scenario is one where the probability of occurrence does not exceed one in 100 per year.

- radiation gauges that are fixed to structures (incorporating either an X-ray tube or a sealed radioactive americium-241 source)
- cabinet X-ray apparatus
- X-ray analysis apparatus (handheld or fully enclosed x-ray analysis apparatus where interlocks do not have to be bypassed).

Employee engagement

The EPA would strongly suggest the importance of employee engagement on any changes to company radiation management plans and company procedures. We encourage considering the views of pregnant or concerned employees who may request personal monitoring and dose assessment. Employers may decide to set up a personal radiation monitoring program by accessing one of the personal radiation monitoring services available from government agencies or private organisations. Note that the EPA does not provide a personal radiation monitoring service.

The use of PRMDs is strongly recommended for students who are occupationally exposed during their course of study. This is regardless of the category of apparatus (as outlined above) used.

Where do I get an approved PRMD

Several organisations provide a range of approved PRMDs suitable for various radiation types (alpha, beta, gamma, X-ray, neutron and fast neutron), as shown in the table below. These organisations also offer personal radiation monitoring services. Please note that these organisations provide products and services on a commercial basis, so there is usually a cost associated with using them.

Personal radiation monitoring device suppliers

Approved PRMD	Supplier	Radiation type
TLD Monitor	ARPANSA ¹	beta, gamma, X-ray
Special TLD Monitor	ARPANSA	beta, gamma, X-ray
Neutron Monitor	ARPANSA	beta, gamma, X-ray, neutron
Extremity Monitor	ARPANSA	beta, gamma, X-ray
PADC/BeO OSL	ARPANSA	Photon, fast neutron
BeO OSL	ARPANSA	Gamma, X-ray
RDC Type 82 TLD-XBGN dosimeter	GMS ²	beta, gamma, X-ray, neutron
RDC Type 83 TLD-XBGN/TE dosimeter	GMS	beta, gamma, X-ray, neutron

Approved PRMD	Supplier	Radiation type
RDC Type 05 TLD-XBG ring dosimeter	GMS	beta, gamma, X-ray
Pa Badge	Landauer ³	beta, gamma, X-ray
Ja Badge	Landauer	beta, gamma, X-ray, neutron
Ta Badge	Landauer	beta, gamma, X-ray, thermal
U Badge (Ring)	Landauer	beta, gamma, X-ray
Personal Alpha Dosimeter	RSIC ⁴	radon progeny and long-lived radioactive dust
Instadose®2□	SGS ⁵	beta, gamma, X-ray
Instadose™	SGS	gamma, X-ray
Instadose +™	SGS	gamma, X-ray
Genesis Ultra TLD	SGS	beta, gamma, neutron
Genesis Ultra TLD with CR39	SGS	beta, gamma, neutron
Film + Orange holder	SGS	gamma, X-ray
Film + Yellow holder	SGS	gamma, X-ray
Film + Blue holder	SGS	gamma, X-ray
TLD + Ring holder	SGS	gamma, X-ray
TLD + PB5 holder	SGS	gamma, X-ray
TLD + PB10 holder	SGS	gamma, X-ray
Mirion DMC 3000	SGS	gamma, X-ray
Mirion SOR/R	SGS	gamma, X-ray
Mirion SOR/T	SGS	gamma, X-ray

Contact information for suppliers

- 1 Australian Radiation Protection and Nuclear Safety Agency
619 Lower Plenty Road
Yallambie VIC 3085
Tel: (03) 9433 2211 or 1800 678 112
Web: www.arpansa.gov.au
Email: prms@arpansa.gov.au
- 2 Global Medical Solutions Australia Pty Ltd
PO Box 115 Arncliffe NSW 2205
Tel: (02) 9503 8100
Fax: (02) 9567 5374
Website: www.gms-aus.com
Email: prms@gms-aus.com
- 3 Landauer Australasia Locked Bag 7002
Parramatta NSW 2124
Tel: (02) 86514000
Fax: (02) 8003 9611
Web: www.landauer.com.au
Email: dosimetry@landauer.com.au
- 4 Radiation Safety Institute of Canada National Laboratories
102-110 Research Drive Saskatoon, SK S7N 3R3
Tel: +306 975-0566
Fax: +306 975-0494
Website: www.radiationsafety.ca
- 5 SGS Radiation Services
10/585 Blackburn Road Notting Hill VIC 3168
Tel: (03) 9574 3370
Fax: (03) 9574 3399
Website: www.radiation.net.au
Email: au.radiation.prms@sgs.com

Further information

Legislation

[Online legislation](#) is freely available.

General information

Environment Protection Authority
GPO Box 2607
Adelaide SA 5001
Telephone: (08) 8204 2004
Website: <https://www.epa.sa.gov.au>
Email: epainfo@sa.gov.au